MECHANIX ILLUSTRATED©

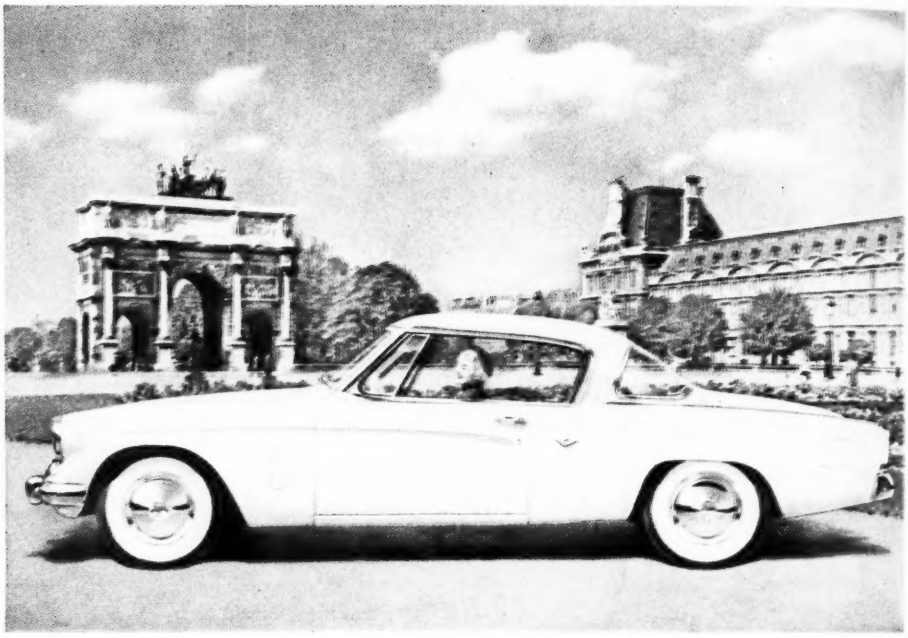
20¢
APRIL

Model Helicopter Takes 700 Hours to Build

PERSONOLOGY— AMAZING NEW SCIENCE HELPS YOU FIND SUCCESS IN LIFE

OLD CAR CONTEST WINNERS ANNOUNCED!

SEE PAGE 96



1953 Studebaker Starliner coupe for five—white sidewall tires and chrome wheel discs optional at extra cost

Actual color photograph

Announcing the New 1953 Studebaker

The new American car with the European look

CHAMPION ★ COMMANDER V-8

The Starliner coupe—less than five feet high! A far-advanced new flight into the future!

HERE is the most daring step forward of our times in automobile designing—a car sparkling with breath-taking originality . . . the new 1953 Studebaker.

This is the first American car with a real foreign-car flair—an impressively long and racy Studebaker that's so very low most people can see right over it.

Stop in at a nearby Studebaker showroom and try out this exciting new car. A truly marvelous power steering is available in the Commander V-8 at moderate extra cost.

Over 100 Years of Studebaker Progress on the Roadways of the World

How to pass a genius

All of us can't be geniuses. But any ordinarily talented mortal can be a success—and that's more than some geniuses are.

Now, as in Æsop's time, the race doesn't always go to the one who potentially is the swiftest. The *trained* man has no trouble in passing the genius who hasn't improved his talents.

In good times and bad times, in every technical and business field, the *trained* man is worth a dozen untrained ones, no matter how gifted.

The International Correspondence Schools can't make you into a genius. For more than 60 years, however, I. C. S. has been helping its students to become *trained, successful leaders*—and it can do the same for you.

Mark your special interest on the coupon. Don't be like the unsuccessful genius who wastes his life in dreaming of what he intends to do. *Act* now!

INTERNATIONAL CORRESPONDENCE SCHOOLS

ICS

BOX 2322-D, SCRANTON 9, PENNA.

Without cost or obligation, send me "HOW to SUCCEED" and the booklet about the course BEFORE which I have marked X:

ART
- ☐ Commercial Art
- ☐ Magazine and Book Illustrating
- ☐ Cartooning
- ☐ Show Card and Sign Lettering
- ☐ Fashion Illustrating

AUTOMOTIVE
- ☐ Automobile, Mechanic
- ☐ Auto-Elec. Technician
- ☐ Auto Body Rebuilding and Refinishing
- ☐ Diesel—Gas Engines

AVIATION
- ☐ Aeronautical Engineering Jr.
- ☐ Aircraft Engine Mechanic
- ☐ Airplane Drafting

BUILDING
- ☐ Architecture
- ☐ Arch. Drafting
- ☐ Building Contractor
- ☐ Estimating
- ☐ Carpenter and Mill Work
- ☐ Carpenter Foreman
- ☐ Reading Blueprints
- ☐ House Planning
- ☐ Plumbing
- ☐ Heating
- ☐ Steam Fitting
- ☐ Air Conditioning
- ☐ Electrician

BUSINESS
- ☐ Business Administration
- ☐ Certified Public Accountant
- ☐ Accounting
- ☐ Bookkeeping
- ☐ Stenography and Typing
- ☐ Secretarial
- ☐ Federal Tax
- ☐ Business Correspondence
- ☐ Personnel and Labor Relations
- ☐ Advertising
- ☐ Retail Business Management
- ☐ Managing Small Business
- ☐ Sales Management
- ☐ Salesmanship
- ☐ Traffic Management

CHEMISTRY
- ☐ Chemical Engineering
- ☐ Chemistry
- ☐ Analytical Chemistry
- ☐ Petroleum—Nat'l Gas
- ☐ Pulp and Paper Making
- ☐ Plastics

CIVIL, STRUCTURAL ENGINEERING
- ☐ Civil Engineering
- ☐ Structural Engineering
- ☐ Surveying and Mapping
- ☐ Structural Drafting
- ☐ Highway Engineering
- ☐ Reading Blueprints
- ☐ Concrete Construction
- ☐ Sanitary Engineering

DRAFTING
- ☐ Aircraft Drafting
- ☐ Architectural Drafting
- ☐ Electrical Drafting
- ☐ Mechanical Drafting
- ☐ Structural Drafting
- ☐ Sheet Metal Drafting
- ☐ Mine Surveying and Drafting

ELECTRICAL
- ☐ Electrical Engineering
- ☐ Electrician
- ☐ Electrical Maintenance
- ☐ Electrical Drafting
- ☐ Electric Power and Light
- ☐ Lineman

HIGH SCHOOL
- ☐ High School Subjects
- ☐ College Preparatory
- ☐ Mathematics
- ☐ Commercial
- ☐ Good English

MECHANICAL AND SHOP
- ☐ Mechanical Engineering
- ☐ Industrial Engineering
- ☐ Industrial Supervision
- ☐ Foremanship
- ☐ Mechanical Drafting
- ☐ Machine Design-Drafting
- ☐ Machine Shop Practice
- ☐ Tool Design
- ☐ Industrial Instrumentation
- ☐ Machine Shop Inspection
- ☐ Reading Blueprints
- ☐ Toolmaking
- ☐ Gas—Electric Welding
- ☐ Heat Treatment—Metallurgy
- ☐ Sheet Metal Work
- ☐ Sheet Metal Pattern Drafting
- ☐ Refrigeration

POWER
- ☐ Combustion Engineering
- ☐ Diesel—Electric
- ☐ Electric Light and Power
- ☐ Stationary Steam Engineering
- ☐ Stationary Fireman

RADIO, TELEVISION, COMMUNICATIONS
- ☐ General Radio
- ☐ Radio Operation
- ☐ Radio Servicing—FM
- ☐ Television
- ☐ Electronics
- ☐ Telephone Work

RAILROAD
- ☐ Locomotive Engineer
- ☐ Diesel Locomotive
- ☐ Air Brakes ☐ Car Inspector
- ☐ Railroad Administration

TEXTILE
- ☐ Textile Engineering
- ☐ Cotton Manufacture
- ☐ Rayon Manufacture
- ☐ Woolen Manufacture
- ☐ Loom Fixing
- ☐ Finishing and Dyeing
- ☐ Textile Designing

HOME ARTS
- ☐ Dressmaking and Designing
- ☐ Cookery
- ☐ Tea Room Management

Name_____ Age_____ Home Address_____

City_____ State_____ Working Hours_____ A.M. to_____ P.M.

Occupation_____

Special tuition rates to members of the Armed Forces. Canadian residents send coupon to International Correspondence Schools Canadian, Ltd., Montreal, Canada

MECHANIX ILLUSTRATED

ANNOUNCING WINNERS OF MI's 2D OLD AUTOMOBILE CONTEST 96

SPECIAL FEATURES

Personology—Science Of Success . . . . . *Lee Edson* 59
Trash Or Treasure . . . . . *Lester David* 66
Dean Of Fish Tacklers . . . . . *West F. Peterson* 70
Barc With A 60-Ton Bite . . . . . *Frank Tinsley* 72
Bonefish—Salt Water Lightning . . . *Raymond R. Camp* 90

TOM McCAHILL TESTS

'53 Dodge V8 82
'53 Volkswagen 86

REGULAR FEATURES

New In Science 64
He Found A Way: William Gray's Pay Telephone . . . . . *Alfred Lief* 69
Money Making Idea: I Put My Money On The Barrelhead . *Roy Sawyer* 76
New For The Home 79
Pin-Up Car 80
New For The Road 81
Prize Gadget: Kiddie Car-Belt 88
Hobby Hall Of Fame: Ivan L. Collins. 94

SHORT FEATURES

Cover: Model-Maker's Minicopter 74
He Makes Match-Terpieces 89
Master Puppeteers 95

DEPARTMENTS

Editor's Workbench 18
Invention Clinic 22
Dear Editor 30

(continued on page 8)

MI
APRIL 1953

W. H. FAWCETT, JR. president
ROGER FAWCETT general manager
RALPH DAIGH editorial director
AL ALLARD art director
LEE WILSON production director
JACK BRYNER advertising manager

WILLIAM L. PARKER editor

GILBERT PAUST feature editor

crafts & hobbies staff
ROBERT BRIGHTMAN crafts & hobbies editor
JOHN G. KINGDON boating editor
JOHN L. SCHERER associate editor
LARRY EISINGER advisory editor

art staff
FRANK A. TAGGART art editor
AL HEIGHINGTON art associate
FRED COSPITO art associate

HELEN E. SLOWIN production editor

VOLUME 48 NUMBER 6

A FAWCETT PUBLICATION

COPYRIGHT 1953 BY FAWCETT PUBLICATIONS, INC.

TITLE REGISTERED U. S. PATENT OFFICE

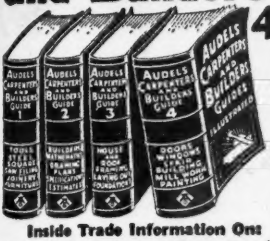
COVER BY PIASECKI HELICOPTER CORPORATION

MECHANIX ILLUSTRATED is published monthly by Fawcett Publications, Inc., Fawcett Building, Fawcett Place, Greenwich, Conn. Printed in U.S.A. Editorial offices 67 W. 44th St., New York 36, N. Y. Advertising offices: New York 36, 67 W. 44th St.; Detroit 26, 1659 Guardian Building; Chicago 11, 612 N. Michigan Ave.; Los Angeles 17, 643 S. Flower St.; San Francisco 5, 605 Market St. General Offices, Fawcett Building, Fawcett Place, Greenwich, Conn. Roscoe K. Fawcett, Circulation Director; Gordon Fawcett, Treasurer; Allan M. Adams, Secretary; Al Allard, Art Director. Entered as second-class matter at the post office at Greenwich, Conn., under the act of March 3, 1879. Additional entry at Louisville, Ky. Copyright 1953 by Fawcett Publications, Inc. Reprinting in whole or in part forbidden except by permission of the publishers. Title registered in the U. S. Patent Office. Address manuscripts to MECHANIX ILLUSTRATED, 67 West 44th St., New York 36, N. Y. All remittances and correspondence concerning subscriptions as well as notification of change of address should be addressed to Circulation Department, Fawcett Building, Fawcett Place, Greenwich, Conn. Not responsible for lost manuscripts or photos. Unacceptable contributions will be returned, if accompanied by sufficient first class postage. Price 20c a copy, in the United States and Possessions and Canada. Subscriptions $2.40 per year in the U. S., Possessions, Canada and Pan-American countries. Other foreign countries $3.15 per year. Foreign subscriptions and sales should be remitted by International money order in U. S. Funds payable at Greenwich, Conn. Advertising forms close fifth of second month preceding date of issue.

MEMBER AUDIT BUREAU OF CIRCULATIONS

AUDELS Carpenters and Builders Guides

4 vols. $6



Inside Trade Information On:

Inside Trade Information for Carpenters, Builders, Joiners, Building Mechanics and all Woodworkers. These Guides give you the short-cut instructions that you want—including new methods, ideas, solutions, plans, systems and money saving suggestions. An easy progressive course for the apprentice and student. A practical daily helper and Quick Reference for the master worker. Carpenters everywhere are using these Guides as a Helping Hand to Easier Work, Better Work and Better Pay. To get this assistance for yourself, simply fill in and mail the FREE COUPON below.

How to use the steel square—How to file and set saws—How to build furniture—How to use a mitre box—How to use the chalk line—How to use rules and scales—How to make joints—Carpenters arithmetic—Solving mensuration problems—Estimating strength of timbers—How to set girders and sills—How to frame houses and roofs—How to estimate costs—How to build houses, barns, garages, bungalows, etc.—How to read and draw plans—Drawing up specifications—How to excavate—How to use settings 12, 13 and 17 on the steel square—How to build hoists and scaffolds—skylights—How to build stairs—How to put on interior trim—How to hang doors—How to lath—lay floors—How to paint

AUDEL, Publishers, 49 W. 23rd St., New York 10, N. Y.

Mail Audels Carpenters and Builders Guides, 4 vols., on 7 days free trial. If OK I will remit $1 in 7 days and $1 monthly until $6 is paid. Otherwise I will return them. No obligation unless I am satisfied.

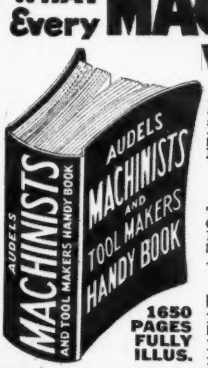
Name_____

Address_____

Occupation_____

Employed by_____ M4

WHAT Every MACHINIST Wants to Know



1650 PAGES FULLY ILLUS.

A SHOP COMPANION

For Every Machinist, Toolmaker, Machine Operator, Draughtsman, Metal Worker, Mechanic and Student. A Key to Modern Shop Practice in All Branches.

SOLVES YOUR PROBLEMS ANSWERS 1001 QUESTIONS

Tells How to Make tools, How to Operate and Set-Up Lathes, How to Lay Out Screw & Milling Machines, Shapers, Drill Presses & All Machine Tools.

QUICK READY REFERENCE PRACTICAL INSIDE INFORMATION

Highly Endorsed—covers How to lay out, How to cut threads; How to make taps & dies, gears, etc.; How to operate boring & milling machines; How to set up grinders, automatic screw machines; How to calculate—How to Use Slide Rule. How to read Blueprints, etc. A timely Book and ready helper.

$4 COMPLETE • PAY ONLY $1 A MONTH

Get This Information For Yourself. Mail Coupon Today.

No Obligation Unless Satisfied. ASK TO SEE IT!

FREE EXAMINATION COUPON

AUDEL, Publishers, 49 W. 23 St., New York 10, N.Y.

Mail AUDELS MACHINISTS & TOOLMAKERS HANDY BOOK, Price $4 on 7 Days Free Trial. If O.K. I will remit $1 in 7 days and $1 monthly until $4 is paid. Otherwise I will return it.

READ FOR PROFIT!

Name_____

Address_____

Occupation_____

Employed by_____ M4

WHAT ALL AUTO MECHANICS WANT TO KNOW

1800 PAGES

This Big Practical Book gives full information with working diagrams covering the principles, construction, ignition, service and repair of modern cars, trucks and buses.

Diesel Engines, Hydramatic & Fluid Drives Fully Explained.

A complete Guide of 1800 pages, with over 1500 illustrations showing inside views of working parts, with instructions for service jobs.

IT PAYS TO KNOW

How to fit pistons—How to locate engine knocks, How to fit connecting rod bearings—How to service main bearings—How to recondition valves—How to time valves—How to adjust fan belts—How to adjust carburetors and chokes, How to rebuild a clutch—How to service automatic transmissions—How to service brakes—How to adjust steering gear—How to cope with ignition troubles—How to service distributors—How to time ignition—How to "tune up" an engine.

$4 COMPLETE • PAY $1 A MO.

TO GET THIS ASSISTANCE FOR YOURSELF SIMPLY FILL IN AND MAIL COUPON TODAY.

Step up your own skill with the facts and figures of your trade. Audels Mechanics Guides contain Practical Inside Trade Information in a Handy Form. Fully illustrated and Easy to Understand. Highly Endorsed. Check the book you want for 7 DAYS FREE EXAMINATION. Send No Money. Nothing to pay postman.

MAIL ORDER

AUDEL, Publishers, 49 W. 23 St., NEW YORK 10, N. Y.

Please send me postpaid for FREE EXAMINATION books marked (x) below, if I decide to keep them I agree to mail $1 in 7 Days on each book or set ordered and further mail $1 monthly on each book or set until I have paid price, otherwise I will return them.

Check NOW!

You Can Look Over Any Guide In Your Own Home — Start the Easy Payments If Satisfied

MAIL THIS TODAY

- ☐ AUTOMOBILE MECHANICS GUIDE, 1800 Pages $ 4
- ☐ TRUCK & TRACTOR GUIDE, 1299 Pages . . . 4
- ☐ DIESEL ENGINE MANUAL, 575 Pages 2
- ☐ MACHINISTS HANDY BOOK, 1650 Pages . . . 4
- ☐ WELDERS GUIDE, 400 Pages 1
- ☐ BLUE PRINT READING, 416 Pages 2
- ☐ MATHEMATICS & CALCULATIONS, 700 Pages. 2
- ☐ SHEET METAL PATTERN LAYOUTS, 1100 Pages 4
- ☐ SHEET METAL WORKERS HANDY BOOK, 388Pgs. 1
- ☐ MECHANICAL DRAWING GUIDE, 160 Pages . . 1
- ☐ MECHANICAL DRAWING & DESIGN, 480 Pages 2
- ☐ AIRCRAFT WORKER, 240 Pages 1
- ☐ TELEVISION SERVICE MANUAL, 384 Pages . . 2
- ☐ RADIOMANS GUIDE, 914 Pages 4
- ☐ ELECTRONIC DEVICES, 216 Pages 2
- ☐ ELECTRIC MOTOR GUIDE, 1000 Pages . . . 4
- ☐ ELECTRIC WIRING DIAGRAMS, 272 Pages . . 1
- ☐ ELECTRICIANS EXAMINATIONS, 250 Pages. . 1
- ☐ ELECTRIC POWER CALCULATIONS, 425 Pages. 2
- ☐ HANDY BOOK OF ELECTRICITY, 1440 Pages. . 4
- ☐ ELECTRIC DICTIONARY, 9000 Terms 2
- ☐ ELECTRIC LIBRARY, 7000 Pages (12 Book Set) 18
- ☐ MARINE ENGINEERS HANDY BOOK, 1358 Pgs. 4
- ☐ SHIPFITTERS HANDY BOOK, 250 Pages . . . 1
- ☐ REFRIGERATION & Air Conditioning, 1280 Pgs. 4
- ☐ MILLWRIGHTS & MECHANICS GUIDE, 1200 Pgs. 4
- ☐ POWER PLANT ENGINEERS GUIDE, 1500 Pages 4
- ☐ ENGINEERS & FIREMANS EXAMS, 525 Pages . 1
- ☐ PUMPS, Hydraulics & Air Compressors, 1658 Pgs. 4
- ☐ ENGINEERS LIBRARY (3 Book Set) 9
- ☐ MECHANICAL DICTIONARY, 950 Pages . . . 4
- ☐ GARDENERS & GROWERS GUIDES (4 Book Set) 6
- ☐ CARPENTERS & BUILDERS GUIDES (4 Book Set) 6
- ☐ PLUMBERS & Steamfitters Guides (4 Book Set) 6
- ☐ MASONS AND BUILDERS GUIDES (4 Book Set) 6
- ☐ PAINTERS & DECORATORS MANUAL, 450 Pgs. 2
- ☐ HOUSE HEATING GUIDE, 1000 Pages 4
- ☐ OIL BURNER GUIDE, 384 Pages 1

Name_____

Address_____

Occupation_____

Employed by_____ M4

JOHN HARRINGTON
Research Director
Autosphere Corp.

Let me tell you how you can TEST YOUR CAR

Amazing new imported device makes it simple for anyone to road test a car's performance. It saves money on gas and repairs; completely replaces "guesswork" with car facts.

Would you like to know the *truth* about your car? For example:

- Actual Road Horsepower
- Stopping Distances in feet
- Pick-up ratings at any speed
- Engine pulling power
- Hill climbing ability
- Best gas for your car
- Condition of your brakes
- Cause of any motor trouble
- Actual results of repair jobs
- Effect of wind and other resistance
- Wheel alignment and chassis checks

New Type of Device

I am going to tell you about a precision instrument that quickly gives you all of this information and much MORE. But let's get one thing clear — it is NOT a vacuum gauge of any kind! I tell you this because some people have confused my PERFOMETER with the common vacuum gauge since — at first glance — they may look similiar. THE COMPARISON ENDS RIGHT THERE!

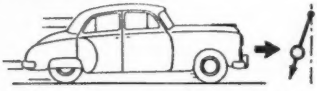
No Connections to Make

The PERFOMETER requires NO CONNECTIONS of any kind to the engine, transmission etc., and is quickly mounted on steering column or dash with the chrome mountings provided. The PERFOMETER operates by man's oldest law—the pendulum principle. It is the most accurate car testing device ever to come on the market at a price the average man can afford. What's more, anyone can understand and USE the PERFOMETER every day!

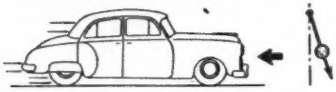
Quality Instrument

The PERFOMETER lasts a lifetime and is as important to the wise car owner as the speedometer, oil gauge or ammeter. It is made by European craftsmen with the integrity and precision of a jeweled movement. It is an entirely self-contained unit. When you hold it in your hands, believe me YOU KNOW you have a real, quality, professional instrument everyone admires. It contains a balanced pendulum dampened by baffles in oil and is hermetically sealed. It even has an automatic temperature and pressure compensator for any climatic and altitude variations.

To get the basic operating idea of the PERFOMETER, just visualize a pendulum hanging in your car. When you step on the gas the force of inertia overcoming gravity will push the pendulum backward. On the other hand, when you step on the brake, the same force will push the pendulum forward. These two basic, universal motions are translated to simple dial readings which provide you with all of the facts about your car's performance.



Step on the gas, the pendulum swings backward. The amount it moves indicates car performance and power.



Step on the brakes, the pendulum swings forward. The amount it moves precisely indicates condition of brakes.

Anyone Can Use

Whether you are technical minded or not; whether you do your own repairs or not; whether you are a "bug" on cars or not; YOU find the PERFOMETER gives you endless information, endless pleasure, endless savings.

View of unit mounted on steering column. Also can be easily mounted on dash.

Variety of Uses

This remarkable device has uses extending from the man who wants to be sure his wife is driving a car with safe brakes, to the sports car fan who is interested in actual brake horse power and optimum gear shift positions.

Unconditionally Guaranteed

The PERFOMETER is UNCONDITIONALLY GUARANTEED to please you or the full purchase price is promptly refunded. Every major motor magazine in the U.S. has tested and praised the PERFOMETER and many motorists have written us that this wonderful instrument fills a long felt need.

Free Book on Car Testing

With every PERFOMETER you receive as a gift a free copy of a 64 page book which tells you all about road testing. Whether you want to become a professional expert, or just learn about your car and have fun, this book tells you how. Also contains COMPARATIVE TEST DATA on all major U.S. and foreign cars.

Immediate Shipment

Act now. PERFOMETER is still in limited supply in the U.S. Fill out coupon below and send your order today. Enclose payment with order and we ship POSTPAID. If you prefer, we will send C.O.D., you pay postman purchase price plus postage and C.O.D. fee. But either way, DON'T DELAY. Each unit sent complete with both dash and steering column chrome mountings plus 64 page book on road testing.

PERFOMETER
TRADE MARK

Autosphere Corp., Dept. L4
11 East 48th Street, New York, N. Y.

Gentlemen:
Rush me ..... PERFOMETER at $22.50 each.
I enclose payment of .....

Name .....

Address .....

City .....Zone ..... State.....

☐ Send COD, I will pay postman $22.50 plus postage charges.

It is understood that the PERFOMETER is UNCONDITIONALLY GUARANTEED and that if I am not satisfied my money will be promptly refunded.

Jobbers Inquiries Invited

I WILL TRAIN YOU AT HOME FOR GOOD PAY JOBS IN RADIO-TELEVISION

J. E. SMITH has trained more men for Radio-Television than any other man.

America's Fast Growing Industry Offers You

2 FREE BOOKS SHOW HOW MAIL COUPON

I TRAINED THESE MEN

LOST JOB, NOW HAS OWN SHOP
"Got laid off my machine shop job which I believe was best thing ever happened as I opened a full time Radio Shop. Business is picking up every week."—E. T. Slate, Corsicana, Texas.

GOOD JOB WITH STATION
"I am Broadcast Engineer at WLPM. Another technician and I have opened a Radio-TV service shop in our spare time. Big TV sales here . . . more work than we can handle." — J. H. Bagley, Suffolk, Va.

$10 TO $15 WEEK SPARE TIME
"Four months after enrolling for NRI course, was able to service Radios . . . averaged $10 to $15 a week spare time. Now have full time Radio and Television business." — William Weyde, Brooklyn, New York.

SWITCHED TO TV SERVICING
"I recently switched over from studio work and am now holding a position as service technician. I am still with RCA, enjoying my work more and more every day."—N. Ward, Ridgefield, N. J.

WANT YOUR OWN BUSINESS?

Let me show you how you can be your own boss. Many NRI trained men start their own business with capital earned in spare time. Robert Dohman, New Prague, Minn., whose store is shown at left, says, "Am now tied in with two Television outfits and do warranty work for dealers. Often fall back to NRI textbooks for information."

1. EXTRA MONEY IN SPARE TIME

Many students make $5, $10 a week and more EXTRA fixing neighbors' Radios in spare time while learning. The day you enroll I start sending you SPECIAL BOOKLETS that show you how. Tester you build with kits I send helps you make extra money servicing sets, gives practical experience on circuits common to Radio and Television. All equipment is yours to keep.

2. GOOD PAY JOB

NRI Courses lead to these and many other jobs: Radio and TV service, P.A., Auto Radio, Lab, Factory, and Electronic Controls Technicians, Radio and TV Broadcasting, Police, Ship and Airways Operators and Technicians. Opportunities are increasing. The United States has over 105 million Radios—over 2,900 Broadcasting Stations—more expansion is on the way.

3. BRIGHT FUTURE

Think of the opportunities in Television. Over 15,000,000 TV sets are now in use; 108 TV stations are operating and 1800 new TV stations have been authorized . . . many of them expected to be in operation in 1953. This means more jobs—good pay jobs with bright futures. More operators, installation service technicians will be needed. Now is the time to get ready for a successful future in TV! Find out what Radio and TV offer you.

You Learn Servicing or Communications by Practicing With Kits I Send

Keep your job while training at home. Hundreds I've trained are successful RADIO-TELEVISION Technicians. Most had no previous experience; many no more than grammar school education. Learn Radio-Television principles from illustrated lessons. You also get PRACTICAL EXPERIENCE. Pictured at left, are just a few of the pieces of equipment you build with kits of parts I send. You experiment with, learn circuits common to Radio and Television.

Mail Coupon—find out what RADIO-TELEVISION Can Do for You

Act Now! Send for my FREE DOUBLE OFFER. Coupon entitles you to actual Servicing Lesson; shows how you learn at home. You'll also receive my 64-page book, "How to Be a Success in Radio-Television." Send coupon in envelope or paste on postal. J. E. SMITH, Pres., Dept. 3DC National Radio Institute, Washington 9, D. C. Our 39th Year.

Television Is Today's Good Job Maker

TV now reaches from coast-to-coast. Qualify for a good job as a service technician or operator. My course includes many lessons on TV. You get practical experience . . . work on circuits common to both Radio and Television with my kits. Now is the time to get ready for success in Television!

The ABCs of SERVICING

Good for Both—FREE

Mr. J. E. Smith, President, Dept. 3DC
National Radio Institute, Washington 9, D. C.
Mail me Sample Lesson and 64-page Book, "How to Be a Success in Radio-Television." Both FREE. (No salesman will call. Please write plainly.)

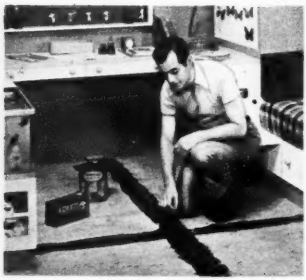
Name ..... Age .....
Address .....
City ..... Zone ..... State .....

Approved under G.I. Bill

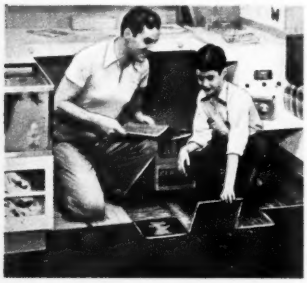
Turn your attic into a *colorful* new room—

Install a long-lasting KENTILE FLOOR

like this for only $17.50*



Handy Ken-Kit has complete easy-to-follow instructions—all the tools you need. After floor has been measured, chalk line is snapped. Next, Kentile Adhesive is spread.



Tiles go down one at a time. After first half is done, Kentile Adhesive is spread and tiles set in remaining area. And, once in place, your Kentile Floor is ready to walk on.

A Kentile Floor like this costs $8 to $20 less than tile floors of many other materials . . . yet Kentile is guaranteed!

Kentile's 25 modern colors give endless design opportunities to make your new room the show spot of your home. Kentile is easy to clean with mild soap and water washings ...glows like new with occasional no-rub waxings. Colors never wear off...because they go clear through to the back of each rugged, dirt and stain-resistant tile. Remember, only your Kentile Dealer carries guaranteed Kentile.

*Price quoted is for a Kentile Floor approximately 6′ x 10′ 6″ installed by you. Your floor may cost less or slightly more, depending on size, colors and freight rates to your city. See your local Kentile Dealer...He's listed in the classified phone directory under FLOORS...In Canada, T. Eaton Co., Ltd.

KENTILE, INC.
58 2nd Avenue, Brooklyn 15, N. Y.

KENTILE

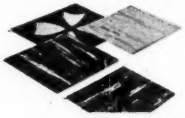
GUARANTEE

Kentile, Inc., will furnish new tile without charge for any Kentile that wears out . . . and on which colors wear off . . . during your own occupancy of your own home wherein you have installed Kentile or have had it installed by an authorized Kentile Dealer. This guarantee does not apply to damage caused by your improper handling or your failure to follow the instructions for installation and/or maintenance available at your Kentile dealer's. This guarantee must be presented if claim is made for new tile.

KENTILE®

The Asphalt Tile of Enduring Beauty

Copyright 1953, Kentile, Inc.



GREAT OPPORTUNITY FIELDS!

Train QUICK in Big Coyne Shops

Instructor helping students check the wiring and trace the circuits of television receivers.

This big fire-proof building is occupied entirely by Coyne.

Instructor explaining operation and testing of a large Motor Generator.

TRAINED YOUNG AND OLDER MEN—URGENTLY NEEDED IN VITAL FIELDS!

ELECTRICITY—RADIO—TELEVISION—ELECTRONICS—VITAL in defense program. Trained men whether 16 or up to 50 needed. TRAIN QUICKLY for better rating if drafted—Vital job in industry if not.

LARGEST, OLDEST, BEST EQUIPPED SCHOOL OF ITS KIND IN THE U.S.

TELEVISION-RADIO

Here at COYNE you're trained for Television, Testing, Trouble-Shooting on Radio, Public Address, F. M. Sound Units, etc. Many Coyne trained men in good jobs or own well paying Television-Radio businesses of their own.

ELECTRICITY

Big future in Power Plant Work, Motors, Industrial Electronics, Armature Winding, Home and Factory Wiring, Appliances, Refrigeration, Maintenance, Illumination, etc. Lifetime job service to Coyne graduates.

WE TRAIN YOU IN CHICAGO

Our famous Practical-Technical method gives you practical experience on a massive outlay of equipment. Actual shop work plus necessary technical training. You are trained right here in the great Coyne shops. Send for BIG FREE BOOK.

APPROVED FOR VETERANS

START NOW—PAY LATER

Enroll now, pay most of tuition after graduation. **Special plan for men of draft age.** We'll help you get part-time work, if you need it to help pay living costs while at Coyne.

Mail Coupon for Big FREE Book!

Whether you prefer Television-Radio or Electricity, train on actual equipment at **Coyne.** We will send you a Big, fully Illustrated Book. Indicate below which course interests you most. No salesman will call. Mail coupon TODAY.

B. W. COOKE, President

COYNE SCHOOL

A TECHNICAL TRADE INSTITUTE CHARTERED NOT FOR PROFIT
Established 1899
500 S. Paulina Dept. 43-53H
Chicago 12, Illinois

ELECTRICITY ★ TELEVISION ★ RADIO ★ REFRIGERATION ★ ELECTRONICS

B. W. Cooke, President
COYNE SCHOOL, 500 S. Paulina St.
Dept. 43-53H, Chicago 12, Ill.

Send me your **Big Free** book. I am interested in field checked below. This does not obligate me.

☐ TELEVISION-RADIO ☐ ELECTRICITY

NAME.....

ADDRESS.....

CITY.....STATE.....

NEWS from SCIENCE
ABOUT YOUR HAIR

Laboratory discovery outdates messy hair oils!

"V-7," completely new *greaseless* grooming agent, now in Vitalis Hair Tonic. It's *not* an animal, vegetable or mineral oil!

Hair stays neat all day

No gummy film, no oily or matted-down look with new Vitalis!

Kills dandruff germs, too!

New Vitalis kills *on contact* germs many doctors associate with infectious dandruff. Feels *"tingling good"* on scalp!

NEW FINER
VITALIS®
HAIR TONIC
WITH "V-7"

Product of Bristol-Myers

MI

CRAFTS AND HOBBIES

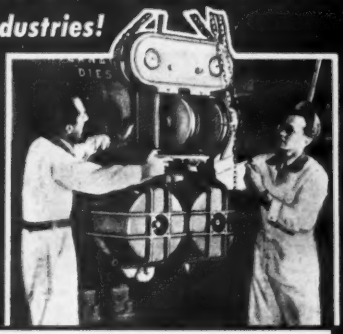
continued from page 2

Build Your Own Garage 98
Lumber 104
The Third Hand 106
How To Stop A Drip 107
Cellar Stairwells 108
Terrace Awning 114
Basement Penthouse 117
Add A Room To Your Attic 118
New Products For Your House 123
Paper Hanging Made Easy 124
Home And Shop Kinks 128
Freddie Fumbles 128
Glamour Ceiling 130
Garden Gates 132
Portable Bench Saw 136
Car Care—Pumps 140
New For The Shop 143
Boating Kinks 144
Monthly Photo Contest 146
Animate Your Photographs 147
Kinescope Photos 148
Easy Easel 149
Amateur Telescope Maker's Page .. 151
MI Workbench Award Winners 152

GET SHOP-METHOD HOME TRAINING

for SUCCESS in Today's Top Industries!

SEND COUPON TODAY for FREE BOOK and COMPLETE SAMPLE LESSON!



RADIO-TELEVISION & ELECTRONICS OR AUTOMOTIVE-DIESEL & ALLIED MECHANICS

Like a business of your own . . . or a good job with a big firm . . . and get paid for what you know? Shop-Method Home Training in Radio, Television, Electronics will bring you the job...money...you've always wanted. 105 *million* Radios, 3100 stations...16 *million* TV sets, over 100 TV stations...many more, now Govt. restrictions are off. Defense industries want trained men for interesting, good pay jobs. Get into this opportunity-making industry...advance fast. Find out how... mail coupon... TODAY!

I GIVE YOU STANDARD PARTS! INCLUDING TUBES!

—they are yours to keep. You actually learn by doing, build generators, receivers, a big Super-Het radio.

THIS PROFESSIONAL FACTORY-MADE MULTI-TESTER IS YOURS!

Valuable equipment every Radio-TV man needs. Yours to keep!

Both Resident and Home Study Courses Offered

Want to be your own boss . . . or get into booming industries? 8 *million* older cars need big, profitable services and repairs. Farm machinery is going Diesel. Defense industry begs for more and more trained mechanics for high-pay jobs. National Schools Shop-Method Home Training prepares you for all Automotive, Diesel, Allied Mechanics opportunities. Helps you get the security, good pay you've always wanted. Send coupon for your Free Book and Sample Lesson now!

LET NATIONAL SCHOOLS of Los Angeles, California, a Resident Trade School for almost 50 years, train you at home for today's unlimited opportunities. Pick your industry—mail coupon below now!

EARN EXTRA MONEY WHILE YOU LEARN!

I show you how to earn extra money *while learning!* Many men have paid for their entire course in this way. You can, too. Remember: Shop-Method Home Training covers *every phase* of the industry — in an interesting step-by-step way. Why wait—take the first step to success—mail the coupon today!

DRAFT AGE? Training helps you get the service branch you want, advance fast. That means higher pay and grade, more prestige — right away! Don't take a chance — mail coupon *now!*

I GIVE YOU THE TOOLS OF YOUR TRADE! Big professional-quality kit of tools of your trade — and all-metal tool box. All yours to keep —part of your course; they help make your training more practical — start you off right!

NATIONAL SCHOOLS

LOS ANGELES 37, CALIFORNIA

Established 1905

In Canada: 193 East Hastings Street Vancouver 4, B.C.

FREE! RADIO-TV BOOK & LESSON!

FREE! AUTO-DIESEL BOOK & LESSON!

APPROVED FOR G.I. TRAINING

DON'T PUT IT OFF GET THE BIG SALARY YOU'VE ALWAYS WANTED!

MAIL TODAY — YOU'RE "ON YOUR WAY"!

NATIONAL SCHOOLS. Dept. A-43
4000 S. Figueroa Street
Los Angeles 37, California

Mail in envelope or paste on postal card

I want to "get going"! Send me Free Book I checked and Free Sample Lesson. I understand no salesman will call.

☐ *My Future in Radio-Television & Electronics*
☐ *My Future in Automotive-Diesel & Allied Mechanics*

NAME _____ AGE _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

☐ VETS! Check here if released from service less than 4 years ago.

Get into BUSINESS for *Yourself!*

METALIZING BABY SHOES AT HOME IN SPARE TIME

Get facts about amazing money-making *Warner Success Plan* that shows you every easy step in completely charted path to personal independence—with your home as your headquarters . . . This proved and tested Plan is working like magic. It's backed by an old, reliable company . . . And we send it to you on a No-Risk Trial Money Back Guarantee.

QUICK CASH WAITING

Demand for METALIZED Baby Shoes and other keepsakes is growing bigger daily. Our Tested Plan Shows How to Do the Work, How to Bring in the Business, How to Make as much as $5 an Hour. Spare or full time, big steady profits are waiting for you. Send postcard or mail coupon for FREE Facts. Act NOW! Time is precious.

FREE offer of COMPLETE MONEY MAKING PLAN

SEND NO MONEY

Just Mail COUPON

Ray Brandell, Mgr., Warner Electric Co.,
1512 JARVIS AVE., DEPT. 64, CHICAGO 26, Ill.

Please rush complete details about your No-Risk Trial Money Back Plan for Metalizing Baby Shoes. Everything you send is FREE and costs me nothing—now or ever.

NAME _____

ADDRESS _____

CITY _____ ZONE ____ STATE _____

BUILD YOUR OWN *Heathkit* TEST EQUIPMENT

Heathkits form a complete line of electronic testing and measuring equipment for hobbyists, radio and TV servicing, appliance repair, laboratory research, and engineering development of all kinds. They are completely engineered quality instruments supplied unassembled (in kit form).

Heathkits are both easy and fun to build! All punching, forming, and painting has been done for you—you get only highest quality components—and the complete, detailed instruction manual tells exactly how to assemble and use the kit. Put them together yourself and eliminate expensive construction costs—and you learn while building.

Write for free catalog today!

HEATH COMPANY
BENTON HARBOR 7, MICHIGAN

LEARN MODERN WATCH AND CLOCK REPAIRING

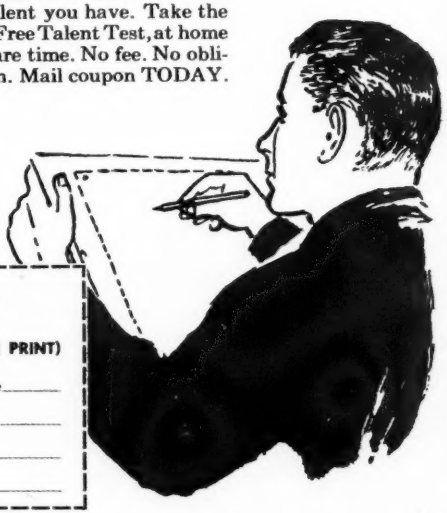
Complete Course—Only $5.95

At home, spare time.—Good field now . . . security and contentment in future. Start part-time business and **EARN** while you learn. Horology is precision instrument work . . . a great and growing field, sensational opportunities. Easy self-instruction course. Full price, only $5.95. SEND NO MONEY. Just pay postman, plus C.O.D. postage. Or send $5.95 with order, we'll ship postpaid. Satisfaction guaranteed or refund. **NELSON-HALL CO., 210 S. Clinton St., Dept. 4DX-3, Chicago 6, Ill.**

If you like to draw

MAKE MONEY WITH YOUR ART!

Find out how much valuable art talent you have. Take the easy Free Talent Test, at home in spare time. No fee. No obligation. Mail coupon TODAY.



ART INSTRUCTION, INC., Dept. 4063
500 S. 4th St., Minneapolis 15, Minn.

Please send me your Free Talent Test. **(PLEASE PRINT)**

Name _____ *Age* _____

Address _____ *Phone* _____

City _____ *Zone* ____ *County* _____

State _____ *Occupation* _____

IF you're that man, here's something that will interest you.

Not a magic formula—not a get-rich-quick scheme—but something more substantial, more practical.

Of course, you need something more than just the desire to be an accountant. You've got to pay the price—be willing to study earnestly, thoroughly.

Still, wouldn't it be worth your while to sacrifice some of your leisure in favor of interesting home study—over a comparatively brief period? Always provided that the rewards were good—a salary of $4,000 to $10,000?

An accountant's duties are interesting, varied and of real worth to his employers. He has *standing!*

Do you feel that such things aren't for you? Well, don't be too sure. Very possibly they *can* be!

Why not, like so many before you, investigate LaSalle's modern Problem Method of training for an accountancy position?

Just suppose you were permitted to work in a large accounting house under the personal supervision of an expert accountant. Suppose, with his aid, you studied accounting principles and solved problems day by day—easy ones at first—then more difficult ones. If you could do this—and could turn to him for advice as the problems became complex — soon you'd master them all.

That's the training you follow in principle under the LaSalle Problem Method.

Over 3500 Certified Public Accountants among LaSalle alumni

You cover accountancy from the basic Principles right up through Accountancy Systems and Income Tax Procedure. Then you add C. P. A. Training and prepare for the C. P. A. examinations.

As you go along, you absorb the principles of Auditing, Cost Accounting, Business Law, Statistical Control, Organization, Management and Finance.

Your progress is as speedy as you care to make it—depending on your own eagerness to learn and the time you spend in study.

Will recognition come? The only answer, as you know, is that success *does* come to the man who is really *trained*. It's possible your employers will notice your improvement in a very few weeks or months. Indeed, many LaSalle graduates have paid for their training—with increased earnings—before they have completed it! For accountants, who are trained in organization and management, are the executives of the future.

Write For This Free Book

For your own good, don't put off investigation of *all* the facts. Write for our free 48-page book, "Accountancy, The Profession That Pays." It'll prove that accountancy offers brilliant futures to those who aren't afraid of serious home study. We'll also include "Ten Years' Promotion in One"—a book which has helped many men. Send us the coupon *now*.

Other LaSalle Opportunities

- ☐ Higher Accountancy
- ☐ C.P.A. Coaching
- ☐ Bookkeeping
- ☐ Law: LL.B. Degree
- ☐ Business Management
- ☐ Salesmanship
- ☐ Traffic Management
- ☐ Foremanship
- ☐ Industr'l Management
- ☐ Stenotypy (Machine Shorthand)

LASALLE EXTENSION UNIVERSITY
A CORRESPONDENCE INSTITUTION

417 S. Dearborn St. Dept. 4493-HR Chicago 5, Ill.

I want to be an accountant. Send me without obligation, "Accountancy, the Profession that Pays"—also "Ten Years' Promotion in One."

Name.....*Age*.....

Address.....

City, Zone & State.....

"Pyroil

makes every ride a JOY ride!"

You'll get a lot more pleasure out of your car when you add Pyroil to your gas and oil. It costs so little to add Pyroil—and in return you're getting priceless protection for expensive engine parts. When you add Pyroil you're getting improved lubrication and "quick starts." You're preventing wear-and-tear caused by metal parts rubbing together, because Pyroil cushions piston rings and cylinder surfaces with a clinging coating of oil at all times. You're getting a clean motor, because Pyroil rids the motor of sludge and gums, and keeps it clean.

Pyroil keeps your car out of the repair shop and keeps you out of the "red." Next time you stop for gas or oil—add Pyroil. It will make every ride a joy ride—it will add more pleasurable miles to your car.

Pyroil for Aircraft Engines

Use Aircraft Pyroil B for lubricating oil, Aircraft Pyroil A for gasoline.

GIVEN! An attractive Pyroil metal savings bank—takes coins up to 50c pieces. MOTORISTS, it's yours for the asking—sent postage paid.

Manufactured and Guaranteed by Pyroil Company, 204 Pyroil Bldg., La Crosse, Wisconsin.

Canadian Distributors: Central Purchasing Agencies, Ltd., Toronto, Ontario

PYROIL COMPANY
204 Pyroil Bldg., La Crosse, Wisconsin

I want my car to last and run properly. Please tell me more about Pyroil and how it can accomplish this for me.

Name .....

Address .....

City or Town..... State.....

Car Owners! Meet Master Glaze—the sensationally different luster for new and used cars! Not a wax—not an oil polish—not a paint!—nothing that "smears" over the surface.

MASTER GLAZE is a unique discovery—a creamy liquid—quick and easy to apply! Gives a hard, glass-like surface. Even gasoline cannot dull it! Lasts six months to a year! Amazing luster—beautiful, sparkling clean and brilliant! Doesn't fingermark—doesn't smear! A match box full glazes an entire car. Seals the pores—protects! NOTHING LIKE IT!

AGENTS
An unusual opportunity! Quick, flashy demonstrator. Big profits. Good territory. Write today!

FREE SAMPLE
Just send your name and address to

MASTER GLAZE CO., 7720-770 W. Harwood Ave., Milwaukee, Wis.

LEARN MEAT CUTTING

Train quickly in 8 short weeks for a bright future with security in the vital meat business. Big pay, full-time jobs—HAVE A PROFITABLE MARKET OF YOUR OWN! Pay after graduation. Diploma given. Job help. Thousands of successful graduates. Our 28th year! Send NOW for big, new illustrated FREE catalog. No obligation. G. I. Approved.

NATIONAL SCHOOL OF MEAT CUTTING, Dept. 52-P, Toledo 4, Ohio

AMAZING NEW POCKET SIZE RADIO!

NO TUBES, BATTERIES OR ELECTRIC "PLUG-INS" NEEDED. "TUNES IN" MOST LOCAL RADIO STATIONS with STATIC-FREE CLEAR TONE. Has new perma-crystal diode and TINY SELF-CONTAINED SPEAKER PHONE—A marvelous real tiny pocket size radio to take with you anywhere you go—FOR REAL FUN AND ENJOYMENT. GUARANTEED TO WORK and should last for years! **SEND $1.00** (Cash, M.O., Ck.) and pay postman $3.99 C. O. D. postage or send $4.99 for p.p. delivery. COMPLETE ready to play. By mail only from: **Midway Co., Dept. PMI-4, Kearney, Nebr.**

ENGINEERING DEGREE IN 27 MONTHS

INDIANA TECHNICAL COLLEGE

Aeronautical, Chemical, Civil, Electrical, Mechanical, and Radio Engineering (inc. TV and Electronics). Drafting. 1-yr. Gov't approved for G.I.'s. Low rate. Earn board. Large industrial center. Students from 48 states, 21 countries. Demand for graduates. Enter June, Sept., Dec., March. Catalog.

104 E. Washington Blvd., Ft. Wayne 2, Ind.

Fabulous Profits At Home...Raising ORCHIDS

RAISE THEM AT HOME FOR PROFIT & PLEASURE. Fill your home with riotous color of these beautiful Tropical flowers. Louis Schirmer, the Dean of American Orchid Growers shows you how! World's most thrilling hobby—most profitable home business. A single Orchid plant may multiply into HUNDREDS—each as valuable as the first. Raise gorgeous Cattleyas, exquisite Cymbidiums, amazing Epidendrums on a card table in your living room, any climate. Big-profit orders come from Homes, Florists, Gift Shops, Dept. Stores, Etc.—also Mail Orders. GROWING STOCK & INSTRUCTIONS SENT AT NO RISK. Complete, illustrated, step-by-step secrets of the experts in simple "show-how" language—INCLUDING Cattleya, Cymbidium and Epidendrum plants—all you need to start at home. FREE—full details—SEND NO MONEY. Write today. TROPICAL FLOWERS, Dept. 461, 601 S. Vermont Ave., Los Angeles 5, California.

NOW! DTI's GREATEST TRAINING OFFER IN 22 YEARS!

IT'S NEW! IT'S PRACTICAL! IT'S DIFFERENT!

DTI's

NEW 1953 HOME TRAINING PROGRAM

has been re-designed to

GET YOU FURTHER FASTER

in

TELEVISION RADIO AND ELECTRONICS

NEW 5-INCH "SCOPE"

D.T.I. now also makes it possible for you to build and keep this big 5-inch commercial-type oscilloscope, one of the most useful and versatile pieces of testing equipment used in television today. In fact, it's almost a "must" for the serious-minded TV technician.

IMPROVED HOME MOVIES

D.T.I.'s new 1953 Master Home Training Program provides you with the use of 16 Hollywood-produced reels of film and a 16 mm. motion picture projector to speed your progress.

MULTIMETER

HOME MOVIES

MILITARY SERVICE!

If you're subject to military service, the information we have for you should prove very helpful.

ONE OF AMERICA'S FOREMOST TRAINING CENTERS

—Established— 1931

Here, we believe, is one of the most **PRACTICAL** . . . most **HELPFUL** . . . most **EFFECTIVE** home training programs ever offered to prepare you to earn real money in America's amazing multi-billion dollar opportunity field of **TELEVISION-RADIO-ELECTRONICS**. Now, at home, you can get real practical experience from working on **high quality, FULL SIZE Commercial type equipment**—much like you'll handle when later working in the TV field. **Here's the REAL THING—nothing else like it!**

You get interest-packed lessons. You get 21 shipments of parts—working over 400 construction and test procedures that include building and keeping D.T.I.'s big, new, 5-INCH Oscilloscope and a jewel bearing Multimeter—followed by building D.T.I.'s wonderful new 21-inch tube TV set. You get shop method training—right at home. And to help you understand all-important fundamentals **FASTER . . . EASIER** . . . you use D.T.I.'s unique and effective **HOME MOVIES**. Then upon completing your training, D.T.I.'s Employment Service helps you **GET STARTED** in a good job or your own sales and service business. Get the facts—including the thrilling story of the opportunities ahead in Television.

OTHER TRAINING PROGRAMS AVAILABLE

D.T.I. also offers home training in (a) Television-Radio-Electronics—but without the TV set, (b) **full time training** in D.T.I.'s big **CHICAGO TRAINING LABORATORIES**—one of the nation's finest. **Mail coupon today.**

89 WAYS TO EARN MONEY IN TELEVISION RADIO ELECTRONICS

Get this publication FREE!

DeFOREST'S TRAINING, INC. Dept. MI4-J
2533 N. ASHLAND AVE., CHICAGO 14, ILL.

I would like your Opportunity News Bulletin showing "89 Ways to Earn Money in Television-Radio-Electronics"; also, complete facts about the training opportunity made possible by your organization.

Name_____ Age_____

Address_____ Apt._____

City_____ Zone____ State_____

DeFOREST'S TRAINING, INC.

AFFILIATED WITH

DeVRY Technical INSTITUTE

• CHICAGO 14, ILLINOIS

WHAT SECRET POWER DID THIS MAN POSSESS?

BENJAMIN FRANKLIN
(A Rosicrucian)

WHY was this man great? How does anyone —man or woman—achieve greatness? Is it not by mastery of the powers within ourselves?

Know the mysterious world within you! Attune yourself to the wisdom of the ages! Grasp the inner power of your mind! Learn the secrets of a full and peaceful life!

Benjamin Franklin—like many other learned and great men and women—was a Rosicrucian. The Rosicrucians (NOT a religious organization) first came to America in 1694. Today, headquarters of the Rosicrucians send over seven million pieces of mail annually to all parts of the world. Write for YOUR FREE COPY of "The Mastery of Life"—TODAY. No obligation. No salesmen. A non-profit organization. Address: Scribe **P.V.H.**

THIS BOOK FREE!

The ROSICRUCIANS
SAN JOSE • (AMORC) • CALIFORNIA

SEND THIS COUPON

Scribe P.V.H.
The ROSICRUCIANS (AMORC)
San Jose, California

Please send me the *free* book, *The Mastery of Life*, which explains how I may learn to use my faculties and powers of mind.

Name_____

Address_____

City_____

BIG OPPORTUNITIES
MANUFACTURING MATERIALS FOR LOW COST BUILDINGS

CASH IN BIG on the great building upturn under way. Make a superior, more permanent material—the kind demanded by your trade—lighter weight, and offering big savings in construction. Sells easily up to 100% over manufacturing costs.

WE EQUIP YOU with line production machinery requiring only modest investment. Raw materials enter at one end—finished products emerge from other end. Big daily production with one to three men. You make common brick—face brick—in over 40 beautiful colors—also DUNSTONE in many sizes.

INVESTIGATE NOW. Send for "Blueprints for Profit." It tells the complete story—how present manufacturers are making outstanding progress in a business offering unlimited opportunity for growth, expansion and profit. Write today.

W. E. DUNN MFG. CO.
459 W. 24th St. HOLLAND, MICHIGAN

SEND FOR THIS FREE!

Make money. Know how to break and train horses. *Write today for this book FREE*, together with special offer of a course in Animal Breeding. If you are interested in Gaiting and Riding the saddle horse, check here ( ) *Do it today—now.*

BEERY SCHOOL OF HORSEMANSHIP
Dept. 1154-D Pleasant Hill, Ohio

REAL ESTATE
BE A BROKER

PAYS BIG! SEND FOR FREE, BIG, ILLUSTRATED CATALOG NOW! Graduates report making substantial incomes. Start and run your own business quickly. Men, women of all ages, learn easily. Course covers Sales, Property Management, Appraising, Loans, Mortgages, and related subjects. **STUDY AT HOME** or in classrooms in leading cities. Diploma awarded. Write TODAY for free book! No obligation.

FREE BOOK TELLS HOW

WEAVER SCHOOL OF REAL ESTATE (Est. 1936)
Suite 300 Law Bldg. Dept. 1M Kansas City, Mo.

Would You Like to Make $1,000 A MONTH?

That's what Stanley Hyman is making selling the amazing new Presto Fire Extinguisher! Many others "cleaning up"—so can you! Amazing tiny new extinguisher ends fires fast as 2 seconds. **Guaranteed for 20 years!** Sells for only $3.98! Write for Free sales kit. No obligation. **Merlite Industries, Inc., Dept. 104, 201 East 16th Street, New York 3, N. Y. (If you want a regular Presto to use as a demonstrator send $2.50. Money back if you wish.)**

LEARN ELECTRICAL APPLIANCE REPAIRING & INSTALLATION

Start Your Own Business

Revolutionary NEW TRAINING METHOD, trains you AT HOME in just a few short weeks.

You receive big "On-the-job" home training kits, text equipment, audio instructions & practical service training lessons. You learn how to Service, Repair & Install all types of Electrical Appliances & Equipment. How to build & operate your own business, etc.

YOU EARN AS YOU LEARN:

You charge on basis of $3.00 to $5.00 per hour for spare time work!

Write today for your Free Book, and full details about this amazing opportunity for you in modern Electric Servicing.

BIG BOOK FREE

ADVANCE TRAINING, Dept. 204
5944 N. Newark Ave. Chicago 31, Ill.

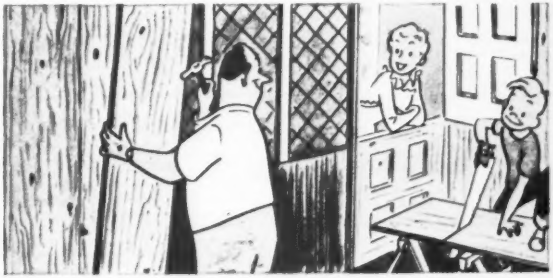
"Pine Panel" your kitchen

the low-cost Gold Bond way!

"Here's how this barn of a kitchen ought to look!" My wife told me, brandishing a copy of the Saturday Evening Post with a Gold Bond ad in it. It was a knockout of a kitchen, all right, but I was afraid it was too expensive for us.

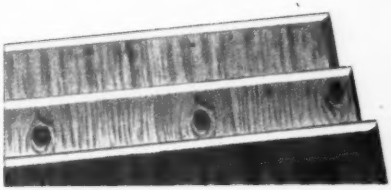
Our Gold Bond dealer showed us Gold Bond Gypsum Grainboard... the inexpensive wallboard that looks like natural wood paneling. He figured the amount needed—and helped plan the room.

We started by nailing "filler strips" to make the wainscoting and upper wall even, so that the final grainboard wall would be flush from top to bottom.



Then we nailed up easy-to-handle planks of Gold Bond Gypsum Grainboard in the Knotty Pine finish. They are lightweight and easy-to-handle. They saw and nail as easily as wood. Best of all, they're fireproof.

Gold Bond Gypsum Grainboard gave us an expensive-looking kitchen at little more than ordinary wallboard cost. And at the same time, made it easy for us to do our own remodeling.



Besides Knotty Pine, there's new rich-toned Dark Walnut and warm Bleached Walnut. Nails match the finishes. See your local Gold Bond lumber and building materials dealer today—or send 10c for a copy of "Remodeling Magic."

NATIONAL GYPSUM COMPANY
DEPT. MI-4, BUFFALO 2, NEW YORK

Fireproof Wallboards, Decorative Insulation Boards, Lath, Plaster, Lime, Sheathing, Roofing, Siding, Wall Paints, Textures, Masonry Paints, Rock Wool Insulation, Metal Lath and Sound Control Products.

WORK CLOTHES BARGAINS!

Special Offer

FREE 10 DAY TRIAL

WORK SHIRTS 79c 3 for $2.29

Blue, Tan, White
Measure Neck & Arm

WORK PANTS 99c 3 for 2.69

Blue, Tan, White
Measure Waist & Leg

SHOP COATS $1.79 3 for $5

Blue, Tan, White
Send Chest Measure

COVER ALLS $1.98 3 for $5.49

Blue, Tan, White
Send Chest Measure

WHAT A BUY! Surplus stock from a big midwest supply firm makes these gigantic savings available to you! Sturdy, serviceable work clothes, though used, have been washed, thoroughly sterilized and reconditioned. Every garment made of long-wearing wash materials, strongly sewn, with reinforced stitching at points of strain. When ordering please state measurements under item.

SEND NO MONEY! Just send name, complete address, clothing desired (state how many of each), and your color choice (also 2nd color choice). We will ship immediately. Pay postman plus postage when your order arrives. Or, enclose cash, check or money order, and We Pay Postage. Keep 10 days. Return for full refund of purchase price if not completely satisfied. Order TODAY at our risk!

YOUNG DISTRIBUTING CO. Dept. 1219 2605 Elmhurst, Detroit 6, Mich.

YOU CAN LEARN TO BE AN ARTIST

Free booklet shows how to earn money
• Cartooning • Lettering • Drawing

Learn how WSA-trained artists earn excellent livings in the fascinating field of art. Step-by-step home study method, perfected in 39 years. Course includes 2 complete art outfits, Life Class Book (human figure), handbook "How to sell your art work." GI approved for eligible veterans. Write for FREE "Art for Pleasure & Profit" booklet today. Include name, age, and full address.

WASHINGTON SCHOOL OF ART
Studio 204K Washington 5, D. C.

Do you want

→ .. to go to College?

→ .. or to enter a Profession?

(Such as Accounting, Architecture, Nursing, Dentistry, Teaching, Social Work, Osteopathy, Beauty Culture, Optometry, Embalming, Chiropody, Law, Medicine, etc.)

→ .. or get an Office Position?

To get anywhere, you practically MUST finish High School FIRST. You can complete our simplified High School Course in SPARE time at home, as FAST as your time and abilities permit. Equivalent to resident school work—prepares you for college, pre-professional examinations, business, industry. Standard texts furnished. Diploma. Credit for H.S. subjects already completed. Single subjects if desired. Low tuition, easy terms. American School, Chicago, est. 1897—endorsed by educators. Finish your high school education NOW. Write TODAY!

High School Course at Home

Many Finish in 2 Years

American School, Dept. H428, Drexel Ave. at 58th St., Chicago 37, Ill.

Gentlemen: Send me FREE information covering special training in subjects checked below. No obligation on my part.

- ☐ High School Course
- ☐ Electronics, Industrial
- ☐ Architecture and Building
- ☐ Automotive Engineering
- ☐ Business Management
- ☐ Electrical Engineering
- ☐ Elec. and Gas Refrigeration
- ☐ Air Conditioning
- ☐ Railway Training
- ☐ Diesel Engineering
- ☐ Drafting and Design for Men and Women
- ☐ Plastics
- ☐ Private Secretary
- ☐ Mechanical Engineering
- ☐ Aviation ☐ Radio
- ☐ Salesmanship

Name .....

Address .....

CARBURETOR TOO RICH
MAKES MOTORIST TOO POOR

Car owners who are wasting money, getting poor gas mileage due to over-rich mixtures, will be pleased to learn how to save gasoline by VACU-MATING OVER-RICH MIXTURES. Vacu-Matic fits all cars, trucks and tractors. *Automatic* and operates on the supercharge principle. Easily installed in a few minutes.

SALESMEN WANTED! Big Profits

For FREE particulars, how you can install one on your own car for introducing, just send your name and address on a postcard to VACU-MATIC, 7617-1998 W. State St., WAUWATOSA, WIS.

High Power BINOCULARS

FREE 14-PAGE BOOK & CHART

$9.95 UP

Know the facts! Learn meaning of Power, Field, Coating. Latest data. 33 Models sold on

30 DAY FREE TRIAL

How To Select BINOCULARS

BUSHNELL'S. MX64 Bushnell Bldg., Pasadena, Calif.

Quick, EASY Way to REPRODUCE any Object

Make exact duplicates of trays, lamp bases, medals, figurines, vases, etc., right at home overnight! New RUBBER MOLD method needs no heat-curing. No special skill or tools required. Make perfect reproductions of objects of clay, plasteline, wood, metal, glass in any quantity! Cost will be only few cents. Send for Brochure 52 which gives exact step-by-step instructions anyone can understand and follow. Send 10c for it today to

SCULPTURE HOUSE, 306 West 42nd Street, New York 36, N. Y.

UP TO 2000 POWER!
MICROSCOPES...OPTICS

FROM $14.95 OPTICS FROM $1.00

UNHEARD OF VALUES IN PROFESSIONAL QUALITY OPTICAL INSTRUMENTS ...

These fine instruments are used throughout the U.S. in laboratories, schools, colleges and physicians' offices

SEND FOR FREE 32 PAGE CATALOG

World's greatest values in hobbyists, students, and professional research microscopes, complete accessories, mechanical stages, eyepieces, prepared slides, dissecting microscopes, ore, mineral, gem microscopes, binoculars, telescopes, magnifying glasses of all types. Each item a bargain ... money-back guarantee.

THE AKRON 4400 SUNSET BLVD. LOS ANGELES 27, CALIF. 4-M

Leonard C. Lane, B.S., M.A.
President of Radio-Television Training Association. Exec. Dir. of Pierce School of Radio and Television.

I GIVE YOU *MORE* EQUIPMENT TO TRAIN YOU BETTER

Set up your own home laboratory with the 15 BIG TV-Radio kits we send you. You build AND KEEP your own complete BIG SCREEN TV RECEIVER, Super-Het Radio Receiver, R.F. Signal Generator, Combination Voltmeter-Ammeter-Ohmmeter, C-W Telephone Receiver, AC-DC Power Supply. Everything is furnished complete, including all tubes, plus big TV picture tube.

GET MORE!

LEARN MORE!

EARN MORE!

THOUSANDS OF NEW JOBS IN TELEVISION

I PREPARE YOU AT HOME IN YOUR SPARE TIME

MORE TRAINING TO FIT YOU FOR THE BETTER PAY JOBS

Thousands of new jobs will open up right in your own state, now that the government has lifted restrictions on new TV stations. My simple, successful methods have helped hundreds of men — most of them with NO PREVIOUS TRAINING — find places in America's booming TELEVISION and Electronics industries. You too can get the success and happiness you always wanted out of life within months . . . studying at home . . . as I train you to become a full-fledged TV TECHNICIAN. Many of my students make as much as $25.00 a week repairing Radio-TV sets in their spare time while learning . . . pay their entire training almost from the very beginning from spare time earnings . . . start their own profitable service business.

But I don't stop after I qualify you as a TV Technician . . . although right there you can choose from among dozens of fascinating careers! I continue to train you — AT NO EXTRA COST — to qualify for even better pay in the BETTER JOBS that demand FCC licenses, with my . . .

MORE VALUE!

YOU GET A ROUND TRIP TO NEW YORK CITY AT NO EXTRA COST

FROM ANYWHERE IN THE U.S. OR CANADA — I pay your way to New York and return. PLUS 2 FREE weeks, 50 hours of advanced instruction and shop training at the PIERCE SCHOOL OF RADIO & TELEVISION. You use modern electronics equipment, including student-operated TV and Radio stations. You go behind the scenes of New York's big Radio-TV centers, to study first hand. And I give you all this AT NO EXTRA COST! (Applies to complete Radio-TV course only.)

Only RTTA makes this amazing offer.

I GET MY GRADUATES GOOD PAYING JOBS

"Thanks to your training, I qualified for a good job as a Receiver Tester at Federal Telephone and Radio."
— Paul Frank Seier

"I'm making good money in my own business, repairing and installing radio and TV sets — thanks to your training."
— Irwin Polansky

"Your excellent instruction helped me get my present job as an airport radio mechanic for American Airlines." — Eugene E. Bashe

"I'll always be grateful to your training which helped me get my present fine position as Assistant Parts Manager."
— Norman Weston

Many others working at NBC, RCA, CBS, DuMont, Philco, Emerson, Admiral and other leading firms.

FREE FCC COACHING COURSE

PREPARES YOU AT HOME FOR YOUR FCC LICENSE.
THE BEST JOBS IN TV AND RADIO REQUIRE AN FCC LICENSE.
Given at NO EXTRA COST after TV Theory and Practice is completed.

NOW! ADVANCED FM-TV TRAINING

If you have previous Armed Forces or civilian radio experience—my ADVANCED COURSE can save you months of training. Full theory and practical training . . . complete with kits, including BIG SCREEN TV RECEIVER and FREE FCC License Coaching Course

FREE EMPLOYMENT ASSISTANCE

My vocational adviser will help you obtain a good-paying job in the locality of your choice

VETERANS!

MY SCHOOLS FULLY APPROVED TO TRAIN VETERANS UNDER *NEW* G.I. BILL! If discharged after June 27, 1950 — CHECK COUPON BELOW!

Also approved for RESIDENT TRAINING in New York City . . . qualifies you for full subsistence allowance up to $160 per month.

MAIL COUPON TODAY!

BOTH FREE! New Illustrated Book and Sample Lesson. Learn How My Simple Methods Make Success Easy!

NO SALESMAN WILL CALL!

Mr. Leonard C. Lane, President
RADIO-TELEVISION TRAINING ASSOCIATION
1629 Broadway, Radio City Station
New York 19, N. Y. Dept. I-4

Dear Mr. Lane: Mail me your NEW FREE BOOK and SAMPLE LESSON that will show me how I can make BIG MONEY in TELEVISION. I understand I am under no obligation and no salesman will call.
(PLEASE PRINT PLAINLY)

Name _____ Age _____

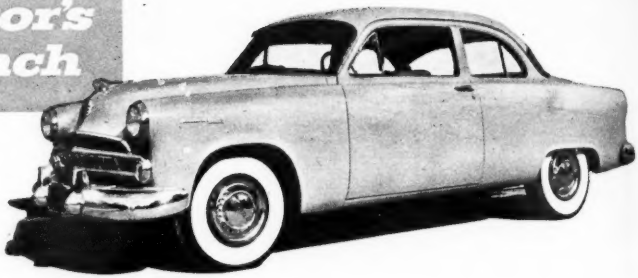
Address _____

City _____ Zone _____ State _____

CHECK HERE IF: ☐ VETERAN ☐ NON-VETERAN

RADIO-TELEVISION TRAINING ASSOCIATION
1629 Broadway, Radio City Station, New York City 19, N. Y.
LICENSED BY THE STATE OF NEW YORK

The Editor's Workbench



A gentleman, scholar and MI reader (they all mean the same thing, natch'lly!) won this '53 Dodge absolutely for free. For inside details, see below.

That Old Car Contest

If there is a happier MI Guy today than citizen Halbert Speer, who won that trim and terrific Dodge coupe (above) in our 2d Old Automobile Contest (pages 96-97), it must be one of the judges who had the task of picking the top ten winners out of the thousands and thousands of entries that came a-winging into our office ever since the December issue went on sale. It was a real tough assignment and if I do say so ourself (I was a judge, too), they did a painstaking, conscientious job of finding the one they thought ought to get the top award as well as the other nine who split up the $500 cash prizes. So even if you didn't win, and we're danged sorry you didn't, you can be absolutely sure that you got a strictly fair shake in the judging. Maybe next time . . .

In the first Old Car Contest, last year, about three per cent of all the contestants got all 12 cars right. This time the percentage dropped to about two and a half per cent. The cars that gave the most trouble were No. 1, the Thomas Flyer, which many people confused with the famous Stutz Bearcat; No. 6, a Firestone-Columbus, often incorrectly identified as a Pope-Hartford; and No. 12, the once-famous Owen Magnetic, which lots of you folks thought was a Locomobile. The Pierce Motorette (No. 8), a relatively obscure make, didn't give too much trouble, maybe because many readers have seen this very specimen at the Long Island Automotive Museum in Southampton, N. Y.

Since several hundred people correctly named all the old-timers, the winners of the prizes had to be selected on the basis of their statement about how to reduce automobile accidents in the U. S. And here we poor, hard-worked judges got a chuckle or two as we went through the letters. One inventive fellow suggested that every car be equipped with special rocket launchers as auxiliary brakes. Need to stop in an extra hurry? Cut loose a couple of rockets and let the back blast halt you dead in your tracks. (How many of the innocent bystanders would also be halted dead in their tracks, deponent saideth not.)

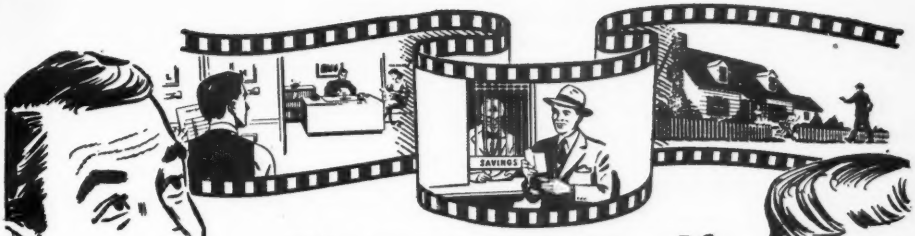
Another gentleman who believes the fault lies in poor visibility from the driver's seat suggests that we should make the guys who designed today's cars drive their own "unguided missiles" through traffic. That'd larn 'em, he says. Another chap, pointing to statistics which prove that more people get killed in traffic accidents on the long holiday weekends than on the short weekends, says we can solve this by eliminating the long holiday weekends. Still another cove, even more direct in his solution, advocates getting rid of all the automobiles.

My favorite, I think, was submitted by an ingenious gent who has found a way to end the menace of drunken driving. Simple, he says. Just make the ignition switch so complicated to operate that no drunk could ever turn it on.

The overwhelming majority of entrants, of course, submitted serious, well-thought-out suggestions for cutting down accidents. On the whole, most people seem to accept the fact that the driver is at fault in most instances. Consequently, many of the suggestions dealt with various methods of training drivers more efficiently, of giving them stricter and more realistic license tests and of regulating their conduct on the highway. A surprisingly large number of contestants believe that Federal control of some sort is absolutely necessary, not only to standardize the present hodge-podge of speed laws and warning signs but also to make sure that everybody takes the same test before he gets a license.

A great many people are aware of the fact that we have outgrown our highways and feel that the only solution is to build wider and safer roads to handle the tremendous increase in traffic. And almost as many would like to see the manufacturers abandon the so-called "horsepower race" and start concentrating on making American cars safer by improving their road-holding qualities instead of increasing their speed.

So that wraps up our 2d Old Automobile Contest. We thought it was great. Thanks for making it so.—*Bill Parker* •



Picture yourself going places

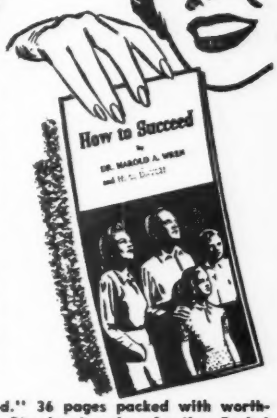
You've done it often. Call it day-dreaming if you like, but you've seen yourself in a bigger job — giving orders and making decisions — driving off in a smart new car — buying your family a fine home.

There's nothing wrong with dreams. But how about making them come true? *You can do it,* if you're willing to try!

Look around you. The men who are going places are the *trained* men. They've learned special skills that bring them better jobs and higher pay. It's the men *without* training whose dreams never come true.

What are you going to do about it? Just wait and wish? If you really *want to succeed,* you can get the training you need by studying at home in your spare time. International Correspondence Schools offer you a course in just about any field you choose, giving you the practical plus the bedrock facts and theory. No skimming or skimping! And you'll be earning while you learn. Students report better jobs and more pay within a few months.

Look over the list of subjects in the coupon below. Pick out the one that interests you most — the one that holds the greatest future for you. Then mark the coupon, and mail it today. *Find out* what I. C. S. can do for you. It costs only a stamp or postcard, but it's the first step if you want to go places!



SMARTEST THING HE EVER DID

"I noticed that the trained men held the better jobs. That's when I decided to take an I. C. S. course. Enrolling with I. C. S. was one of the smartest things I ever did. The position as Plant Engineer I hold today is largely due to the 'know-how' derived from my I. C. S. texts. I. C. S. can help any man who will study."

L. P. S., Elkhart, Ind.

FREE BOOK ▶ **"How to Succeed." 36 pages packed with worthwhile success tips. Step-by-step plan of action. Pocket size edition. Absolutely free. Send coupon below.**

INTERNATIONAL CORRESPONDENCE SCHOOLS

ICS

BOX 2323-D, SCRANTON 9, PENNA.

Without cost or obligation, send me "HOW to SUCCEED" and the booklet about the course BEFORE which I have marked X:

ART
- ☐ Commercial Art
- ☐ Magazine and Book Illustrating
- ☐ Cartooning
- ☐ Show Card and Sign Lettering
- ☐ Fashion Illustrating

AUTOMOTIVE
- ☐ Automobile, Mechanic
- ☐ Auto-Elec. Technician
- ☐ Auto Body Rebuilding and Refinishing
- ☐ Diesel—Gas Engines

AVIATION
- ☐ Aeronautical Engineering Jr.
- ☐ Aircraft Engine Mechanic
- ☐ Airplane Drafting

BUILDING
- ☐ Architecture
- ☐ Arch. Drafting
- ☐ Building Contractor
- ☐ Estimating
- ☐ Carpenter and Mill Work
- ☐ Carpenter Foreman
- ☐ Reading Blueprints
- ☐ House Planning
- ☐ Plumbing
- ☐ Heating
- ☐ Steam Fitting
- ☐ Air Conditioning
- ☐ Electrician

BUSINESS
- ☐ Business Administration
- ☐ Certified Public Accountant
- ☐ Accounting
- ☐ Bookkeeping
- ☐ Stenography and Typing
- ☐ Secretarial
- ☐ Federal Tax
- ☐ Business Correspondence
- ☐ Personnel and Labor Relations
- ☐ Advertising
- ☐ Retail Business Management
- ☐ Managing Small Business
- ☐ Sales Management
- ☐ Salesmanship
- ☐ Traffic Management

CHEMISTRY
- ☐ Chemical Engineering
- ☐ Chemistry
- ☐ Analytical Chemistry
- ☐ Petroleum—Nat'l Gas
- ☐ Pulp and Paper Making
- ☐ Plastics

CIVIL, STRUCTURAL ENGINEERING
- ☐ Civil Engineering
- ☐ Structural Engineering
- ☐ Surveying and Mapping
- ☐ Structural Drafting
- ☐ Highway Engineering
- ☐ Reading Blueprints
- ☐ Concrete Construction
- ☐ Sanitary Engineering

DRAFTING
- ☐ Aircraft Drafting
- ☐ Architectural Drafting
- ☐ Electrical Drafting
- ☐ Mechanical Drafting
- ☐ Structural Drafting
- ☐ Sheet Metal Drafting
- ☐ Mine Surveying and Drafting

ELECTRICAL
- ☐ Electrical Engineering
- ☐ Electrician
- ☐ Electrical Maintenance
- ☐ Electrical Drafting
- ☐ Electric Power and Light
- ☐ Lineman

HIGH SCHOOL
- ☐ High School Subjects
- ☐ College Preparatory
- ☐ Mathematics
- ☐ Commercial
- ☐ Good English

MECHANICAL AND SHOP
- ☐ Mechanical Engineering
- ☐ Industrial Engineering
- ☐ Industrial Supervision
- ☐ Foremanship
- ☐ Mechanical Drafting
- ☐ Machine Design-Drafting
- ☐ Machine Shop Practice
- ☐ Tool Design
- ☐ Industrial Instrumentation
- ☐ Machine Shop Inspection
- ☐ Reading Blueprints
- ☐ Toolmaking
- ☐ Gas—Electric Welding
- ☐ Heat Treatment—Metallurgy
- ☐ Sheet Metal Work
- ☐ Sheet Metal Pattern Drafting
- ☐ Refrigeration

POWER
- ☐ Combustion Engineering
- ☐ Diesel—Electric
- ☐ Electric Light and Power
- ☐ Stationary Steam Engineering
- ☐ Stationary Fireman

RADIO, TELEVISION, COMMUNICATIONS
- ☐ General Radio
- ☐ Radio Operation
- ☐ Radio Servicing—FM
- ☐ Television
- ☐ Electronics
- ☐ Telephone Work

RAILROAD
- ☐ Locomotive Engineer
- ☐ Diesel Locomotive
- ☐ Air Brakes ☐ Car Inspector
- ☐ Railroad Administration

TEXTILE
- ☐ Textile Engineering
- ☐ Cotton Manufacture
- ☐ Rayon Manufacture
- ☐ Woolen Manufacture
- ☐ Loom Fixing
- ☐ Finishing and Dyeing
- ☐ Textile Designing

HOME ARTS
- ☐ Dressmaking and Designing
- ☐ Cookery
- ☐ Tea Room Management

Name_____ Age_____ Home Address_____

City_____ State_____ Working Hours_____ A.M. to_____ P.M.

Occupation_____

Special tuition rates to members of the Armed Forces. Canadian residents send coupon to International Correspondence Schools Canadian, Ltd., Montreal, Canada

The NEW Model 50 UTILITY TESTER

FOR REPAIRING ALL ELECTRICAL APPLIANCES-MOTORS

an all-around electrical trouble shooter

- Measures A.C. and D.C. Voltages, A.C. and D.C. Current, Resistances, etc.
- Will measure the current consumption while the appliance under test is in operation. The appliance or utility may be plugged directly into the front panel receptacle. A special pair of insulated clip-end leads is included for motors, etc.
- Incorporates a sensitive direct-reading resistance range which will accurately measure all resistances commonly used in electrical appliances, motors, etc. This range will enable continuity checks and tests for shorts and opens.
- Will test thermostats, radio tube filaments, bulbs, fuses, fluorescents, condensers, switches, field coils, circuit breakers, lighting systems, etc.

Handsome round cornered molded bakelite case 3⅛" x 5⅞" x 2¼". Complete with all test leads and instructions.

$13.90

SHIPPED ON APPROVAL

No Money With Order — No C.O.D.

Try it for 10 days before you buy. If completely satisfied send $3.90 and pay balance at rate of $2.00 per month for 5 months —No Interest or Carrying Charges Added. If not completely satisfied, return to us, no explanation necessary.

SUPERIOR ELECTRONIC CO., INC.
Dept. D-54, 227 Fulton Street, New York 7, N. Y.

Please rush 1 Model 50. I agree to pay $3.90 within 10 days after receipt and $2.00 per month thereafter.

Name .....

Address .....

City ..... Zone ..... State .....

Copr. 1952 R. D., Inc.

STOP THAT OIL BURNER!

GET THAT "NEW CAR" PERFORMANCE WITH

Ring-Re-Nu

TRADE-MARK

MOTOR RECONDITIONER KIT

No need for costly overhauling. Simply pour P.V.R. Compound in carburetor to clean engine; remove gum, tar and varnish. Then squeeze RING-RE-NU in cylinders . . . forms a pliable, lubricating seal around worn rings. Restores power and compression, eliminates oil burning and piston slap. Good for 10,000 plus miles . . . applied in a few minutes. Order Genuine RING-RE-NU . . . not a foreign import. Made in America for American engineered engines. Guaranteed not to harm your engine.

1 tube kit — good for all makes of cars (except those listed below) only **$4.95** POSTPAID

2 tube kit — for larger engines — Buick Roadmaster, Cadillac, Chrysler 8, La Salle, Lincoln, Packard 8, Olds 88 and 98 — $8.95 postpaid.

($1.00 deposit required on all C.O.D. orders)

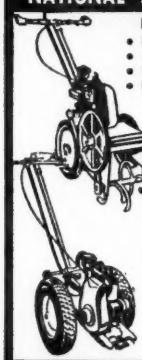
10 DAY MONEY BACK GUARANTEE

WRITE FOR FREE FOLDER

RICHIE DISTRIBUTING, INC.

11916 MADISON AVE., DEPT. D4, CLEVELAND 7, OHIO

NATIONAL SUPER-VALUE SPECIALS



ROTO-MATIC ROTARY TILLER

- Prepares Soil Without Spading
- 1½ H. P. Briggs & Stratton Engine
- Does 4 Jobs in One Operation
- Gives Deep, Fast Cultivation

ONLY **109.50**

Send for our 1953 Catalog for these and other super values.

RELIABLE GARDEN TRACTOR

- 1½ H. P. Briggs-Stratton Engine
- Positive 2-Wheel Drive
- 400 x 8 Traction Tires
- Cultivates, Plows, Discs etc.

ONLY **109.50**

NATIONAL FARM EQUIPMENT CO., Inc.

142 GREENE STREET • NEW YORK 12, N. Y.

Malayan THROWING DAGGER

BALANCED TO STICK! **$1.98** postpaid

The MALAYAN FIGHTING KNIFE is used for self-defense, killing game, target skill. Powerful, silent, accurate weapon. Splits 1" board at 30 ft.

EASY TO THROW!

MONEY BACK GUARANTEE

Fun, Thrills, Excitement! Indoors—outdoors. Learn this Sport! Easy to throw accurately with our clear instructions. Beautiful, heavy-duty 10" knife. Tempered steel. Tough, rawhide-bound handle. Rare souvenir, unusual bargain. Limited quantity. At dealers or send $1.98

WHOLESALE IMPORT CO. Dept. N, 604 Marengo, Alhambra, Calif.

"How to Make Money with Simple Cartoons"

A book everyone who likes to draw should have. It is free; no obligation. Simply address

FREE BOOK

CARTOONISTS' EXCHANGE
Dept. 354D, Pleasant Hill, Ohio

CARS Magazine

Second issue on newsstands. First a sellout so get your May copy NOW!

LOW PRICES-GUARANTEED

FREE TUBE WITH EACH PASSENGER TIRE

QUALITY PASSENGER TIRES—1 Year Written Guarantee

600x16	$5.59	670x15	$5.95
650x16	$5.79	700x15	$5.99

EXTRA VALUE TRUCK TIRES—1 Year Guarantee: 700x20 ....$12.50
750x20(8) ....$14.50 | 750x20(10) ....$18.00 | 825x20 ....$21.50

Write for price list for sizes not listed. Take off 10% on orders for two or more tires. All prices F.O.B. Richmond, Va.

MAIL ORDERS PROMPTLY FILLED. Send check or money order with this ad.

THE SAFTYRE CO., INC.
"For that SAFE TIRE"
Dept. MI, 1801 E. Broad St., P.O. Box 2254, Richmond, Va.

WARN HUB CAPS MAKE 2 JEEPS OUT OF 1

End front wheel drag on all 4-wheel drive Willys and Dodge vehicles

Save gas to 5 miles per gallon, reduce wear on front tires, axles; increase speed and power, stop front wheel shimmy—front wheels coast out of gear! 4-wheel drive handles, performs, climbs like 2-wheel. Install or remove in 10 minutes. Polished aluminum, guaranteed. Thousands in use. Prices quoted. Rush check, M.O., or C.O.D. NEW AUTOMATIC CAP available! Permits use as 2 or 4-wheel drive automatically, all speeds. LOCKING CAP also available which converts from 2- to 4-wheel drive or back with simple turn of lock. Fully guaranteed. Write for literature, prices.

Willys $20.00
Dodge $23.00
Ppd. U.S., Canada

WARN MFG. CO., Riverton Box 6064-M2, Seattle 88, Wash.

INVENTORS

Learn how to protect your invention. The U. S. Patent Laws provide that any new and useful art, machine, article of manufacture, or composition of matter, or any new and useful improvement thereof, may be patented if the act of invention is involved. Therefore, every inventor with a valuable invention should take advantage of the Patent Laws and proceed for patent protection in order to safeguard his rights.

A patent gives the inventor the exclusive right to prevent others from making, using, or selling the invention claimed in the patent for a period of seventeen years.

The Patent Laws were enacted for the benefit of the inventor to give him protection for the features of his invention which are patentable. These features must be properly and concisely set forth and claimed in a formal application for patent, in order to comply with the requirements of the Patent Laws. For that reason, unless the inventor is familiar with patent matters, he should engage a competent registered patent attorney or agent to represent him. We are registered to practice before the U. S. Patent Office and are prepared to serve you in the handling of your patent matters.

A specially prepared booklet entitled "Patent Guide for the Inventor", containing detailed information with respect to patent protection and procedure, together with a "Record of Invention" form will be promptly forwarded to you without obligation upon request.

CLARENCE A. O'BRIEN & HARVEY JACOBSON

Registered Patent Attorneys

33-D DISTRICT NATIONAL BUILDING

WASHINGTON 5, D. C.

Invention Clinic

JOSEPH H. KRAUS

Auto Indicators - Taillights

SAFE auto driving will take a major step forward when an inventor develops an automatic block system which may be applied to our highways.

Block signal systems are used on all of our major railroads and on the scenic railways of summer amusement parks. Such systems and tripping devices are responsible directly for their remarkable safety records. Methods similar to this could be arranged for our highways.

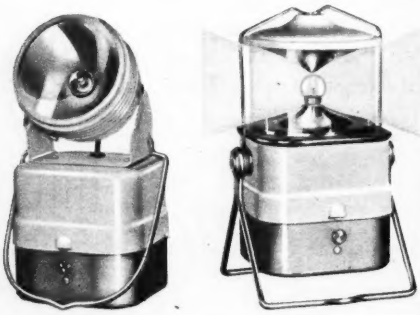
Present knowledge of radar, electronics, magnetism, timing devices and interlocked relay systems offers the inventor hundreds of possibilities for developing a really scientific answer to the problem. It may take many years before a satisfactory plan is developed. It will take even longer to get approval by the city fathers for its first test. But once put into action such a system would reduce auto accidents to a minimum.

Any signals, blocks or tripping devices would have to work independently of the individual automobile. They cannot be expected to be part of the automobile itself. Instead, all controls must be part of the highway installation. The inventor must remember that autos do not travel in straight lines on something comparable to tracks. So although a tripping device to release an air brake is relatively easy to devise for a railroad train, it is quite completely out of line for a car. Even assuming that you could provide automatic brakes for autos and trips to release them, there always is the danger of having the trip knocked free on rough roads. This can be dangerous in heavy or fast-moving traffic.

Assuming that the inventor can perfect such a mechanism, it is not likely that any state laws would be passed immediately to require installation of automatic brakes in cars. Let us assume further that one group would want to arrange for such brakes and the second would not agree to do so, only half the autos would be under control while the rest would extend the dangers.

Hence, to be acceptable, the control must

[*Continued on page* 24]



Work light, left, and red blinker light, right, by Justrite Mfg. Co. of Chicago, aid motorist whose car might break down on a congested highway at night.

Electric throttle, button at toe, holds accelerator at speed so foot can be near brake, releases when brake is applied or button pressed. D & M, Anderson, Ind.

INVENTORS

If you believe that you have an invention, you should find out how to protect it. The first step is to have a search made of the prior pertinent U. S. patents. If a report on this search indicates that the invention appears patentable you can apply for a patent, and the specifications and claims should be prepared.

The firm of McMorrow, Berman & Davidson, with offices in Washington, D. C., is qualified to take the necessary steps for you. We can make a preliminary search on your invention, advise you whether we think it can be patented, and prepare your application for patent.

Unless you are fully familiar with the U. S. Patent Laws, we recommend that you engage the services of a Registered Patent Attorney to protect your interests. The patent laws are *your* laws. A patent gives you the right to prevent others from making, using or selling the invention claimed in your patent for a period of 17 years.

Use these patent laws for your protection. Investigate whether your invention can be patented. If you have what you believe to be an invention, we suggest that you have this firm make a search for you.

Send for a copy of our Patent Booklet entitled "How To Protect Your Invention," containing information about patent protection and patent procedure. Along with this we will also send you an "Invention Record" form, for your use in writing down and sketching details of your invention. We will mail them promptly. No obligation. They are yours for the asking.

McMORROW, BERMAN & DAVIDSON

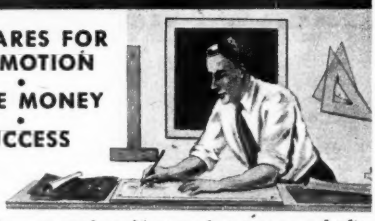
Registered Patent Attorneys

PATENTS • COPYRIGHTS • PATENTS

139-H VICTOR BUILDING, WASHINGTON 1, D. C.

C. T. C. TRAINING IN
DRAFTING

PREPARES FOR PROMOTION
•
MORE MONEY
•
SUCCESS



"Here I am at work making good money as a draftsman. I'm glad I sent the coupon to Chicago Tech for that Free Trial Lesson and found out how easy it is to learn Drafting in spare time at home. Today, I feel secure in my job. What's more, I feel I'm slated for promotion and more pay."

LEARN IN SPARE TIME—AT HOME!
(or at the College in Chicago)

A few hours of pleasant home study every week—that's all. All the tools you need; drawing outfit included. This tested method—developed over 48 years of C.T.C. progress—prepares men quickly for good positions in industry.

FREE INFORMATION — SEND COUPON

To prove to you how easy it is to learn Drafting at home, we will send you this FREE TRIAL LESSON. Mail coupon or send post card today.

CHICAGO TECHNICAL COLLEGE

D-277 Tech Bldg., 2000 S. Michigan Ave., Chicago 16, Illinois
Mail me FREE Lesson with information about big opportunities in DRAFTING.

Name..... Age.....

Address .....

City..... Zone..... State.....

INVENTORS

Your first step—if you consider your invention to be something of importance—is to have a search made of pertinent, prior U. S. patents. If our search report indicates probable patentability of your invention, you may apply for a patent which gives you the right to exclude others from making, using or selling your invention as claimed for a term of 17 years.

This firm is registered to practice before the U. S. Patent Office and is available to assist in the preparation of the necessary drawings, specification and claims.

Ask for a copy of our instructive booklet "Patent Protection for Inventors" and our convenient "Evidence of Invention" form. No obligation.

VICTOR J. EVANS & Co. Merlin M. Evans
REGISTERED PATENT ATTORNEY
850-D MERLIN BUILDING, WASHINGTON 6, D. C.

Invention Clinic

[*Continued from page* 22]

be applied to the road, not to the auto. The system should be relatively easy to install and should be self contained. A good arrangement would be an easy attachment to a light pole. An efficient system would take into consideration the speed of the cars which have passed and the distance between them, and maintain a safe spacing.

The taillights also are in need of considerable improvement. Many patents have been granted for devices which flash lights when the car is going forward or is stopping. Most of these are entirely automatic. Stepping on a brake flashes a red signal or exposes a "stop" sign. A green light or "go-ahead" signal is evident while the foot is on the accelerator.

Unfortunately, there are many failures in such systems excluding those which can be ascribed to faulty hookup. For example, the "go-ahead" signal flashes when the car is backing up. This could prove quite dangerous particularly during foggy weather.

A big problem with such automatic signalling systems is that they register what already has happened, not what is about to happen. The element of intent is missing from most of the modern stop-and-go indicators.

In the scuffle for improvements many patents, now part of the public domain, have been overlooked. Some of these old-time inventions covered the idea of placing a signal system well forward so that persons on the side roads, too, could see what the motorist intends to do. Many of these were in the form of lights combined with the motometer—a radiator thermometer quite popular in its day—which required lights to see it in the dark.

Ingenious are the methods for obtaining a flashing light. Some use the bouncing of the auto to open and close the electrical circuits. Others go to the extreme of utilizing a blower

[*Continued on page* 26]

PATENTS
C. A. SNOW & CO.
REGISTERED PATENT ATTORNEYS
WRITE FOR INFORMATION TO
427 SNOW BUILDING, WASHINGTON 1, D. C.

INVENTORS

Send for PATENT INFORMATION Book and INVENTOR'S RECORD without obligation
GUSTAVE MILLER
43MI Warner Building
Washington 4, D.C.

REGISTERED PATENT ATTORNEY
Patent Attorney & Advisor
U.S. NAVY DEPT. 1938-1947
ASSOCIATE EXAMINER
U. S. PAT. OFF. 1922-1929
PATENT LAWYER

OWN Your Own Business

$5 per hour

Clean and Mothproof rugs and upholstery "in the home" or public buildings. If now employed, you can operate in spare time and build up a permanent profitable full-time business. Alert dealers can average $5 hourly gross profit on service they render and $3 on EACH of their servicemen at National Price Guide charges. Easy to learn . . quickly established.

DURACLEAN cleans by absorption! No scrubbing, soaking or shrinkage. Dirt and grease vanish . . matted pile rises . . colors revive. Furnishings used again same day.

DURAPROOF resists moths and carpet beetles. Your service backed by a National Money Back 4 Year Warranty.

We furnish enough material to return your total investment in War-proof Business. EASY TERMS. Send for **FREE** booklet TODAY.

DURACLEAN CO., 3-174 DURACLEAN BLDG., DEERFIELD, ILL.

WELD YOUR WAY AHEAD!

Learn Arc and Gas Welding In Spare Time

Your opportunities are greater when you learn to use this great tool of modern industry. Training in welding opens the door to many key industries. Now you can train at home with UEI's practical course. Includes techniques, metallurgy, blueprints, shop practices, other important phases.

Write For FREE Facts! You can follow home-study training with actual shop practice. High school diploma not necessary. Write NOW!

UTILITIES ENGINEERING INSTITUTE
2523 Sheffield Ave., Dept.WJ-1,Chicago 14, Ill.

MAKE YOUR DREAM A REALITY

YES...I can show you how to establish your future independence at home in spare time without giving up your present pay check or taking chances on your job.

GET INTO THE FASCINATING NEW

PLASTIC LAMINATING BUSINESS

BIG ENOUGH PROFITS for full time operation

FLEXIBLE ENOUGH to start in spare time

CAN BE LEARNED in one hour of practice

Extra money can be made at once—while starting. A nice profit can be realized on your cost of materials—from the first week. And the beauty of it is I give you seven different plans for selling your entire output without any canvassing or house-to-house selling—including one simple method by which you get

MONEY and ORDERS by Mail!

Yes, you mail out laminated items and get cash back by mail. A number of people I have started are doing very well with this plan. If you prefer, you can enter the giftwares field, letting gift shops sell, but I also show you what to make for three important fields—giftwares, advertising signs, and laminates.

Whether you just want to make an extra $30.00 to $50.00 a week in spare hours, or whether you want to establish the foundation for a future of independence in a business of your own, I'm sure you'll find my plan of great interest . . . and very practical.

SIMPLE MACHINE does the work!

Set up your business in kitchen, basement, or garage. This simple Press does the Laminating. Anyone can learn its operation in an hour. Small in size, safe to operate, and uses electric heat. Plugs in like a toaster or iron. Work is so light it's fun for the whole family. Send your name and address for FREE information. See how a spare time start can bring money AT ONCE and establish a sound foundation for the future.

Either men or women can succeed in Plastic Laminating and the field is growing by leaps and bounds.

Read My Plan—Then Decide!

Don't risk any money. Don't buy any equipment or materials until you have read the whole plan and made your own investigation. Send your name on the coupon or a post card. Just ask for Free Information on Plastic Laminating. No salesman will call. Everything will be sent by prepaid mail. Tear out coupon before you turn the page, so you won't forget. This is a very exceptional opportunity and you should investigate at once. A three-cent stamp now, may open the door to a secure future. Send for the free information at once. Use coupon below.

R. E. BRANDELL, 1512 Jarvis Ave., Dept. L-124, Chicago 26, Ill.

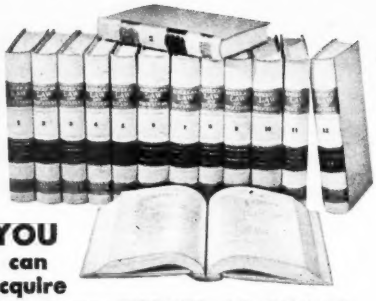
R. E. BRANDELL, Dept. L-124,
1512 Jarvis Ave., Chicago 26, Ill.

Please send the free information on Plastic Laminating and show me how I can start in spare time and make money as I build my business. No charge. No salesman will call. All facts are free, postpaid.

NAME .....

ADDRESS .....

CITY ..... ZONE .... STATE .....



YOU can acquire

LAW ***NIGHTS AT HOME!*** **L L.B. DEGREE**

LaSalle's famous Law Library—used as reference in many Law libraries and Law offices—has enabled thousands to master Law surprisingly fast, in spare hours at home, for business and professional advancement.

These 14 remarkable volumes, compiled by leading professors and lawyers, cover the whole basic field of Law in condensed, orderly, simplified manner.

You advance rapidly with this great library, plus special lectures furnished. We guide you step-by-step with personalized Problem Method of instruction . . . you *learn by doing*—handling legal problems—not by memorizing rules.

Send for two FREE 48-page booklets, "Law Training for Leadership," and "Evidence," answering questions about Law and its value to you, and telling how LaSalle Law graduates are winning rapid advancement in business and public life. Mail coupon below. No obligation.

LA SALLE EXTENSION UNIVERSITY
A Correspondence Institution
417 S. Dearborn St. Dept. 4493-L Chicago 5, ILL.

Send me your two FREE booklets described above, without obligation.

*Name*_____ *Age*_____

*Street*_____

*City, Zone & State*_____

INVENTORS

IF YOU WISH TO PROTECT YOUR INVENTION

YOU SHOULD TAKE STEPS TO PROTECT IT BY A U.S. PATENT WRITE ME FOR *"INVENTION RECORD"* FORM

CARL MILLER
REGISTERED PATENT ATTORNEY

WOOLWORTH BLDG., 35th FLOOR, 43B NEW YORK CITY

Invention Clinic

[*Continued from page 24*]

to rotate a shutter located in front of the lamp.

All these things are good, of course, but the most needed still remains in the mind of some inventor. Just design a good signal which will be understood throughout the land, will announce intent and will not fail mechanically. Or, better yet, design a block system to control speed of autos on our highways. •

Next Month: Ore Locators.

INVENTORS

I shall be pleased to furnish you, upon request, with information relative to patent procedure—without any obligation on your part.

PATRICK D. BEAVERS
Registered Patent Attorney
923 Columbian Building, Washington 1, D. C.

INVENTORS

Whether an invention is patentable can be substantially determined by a search of the U. S. Patent records. Without obligation, write for information explaining the steps you should take to secure a patent.

JOHN N. RANDOLPH
Registered Patent Attorney
209 Columbian Building Washington 1, D. C.

SHORTHAND IN 6 WEEKS

LEARN AT HOME — LOW COST

Write 120 words per minute. Age no obstacle. Famous Speedwriting Shorthand. No symbols; no machines; uses ABC's. Easiest to learn and use. Fast preparation for a better position. Nationally used in leading offices and Civil Service; also by executives, students, etc. 120 words per minute. 50% FASTER than Civil Service requirements. Over 150,000 taught by mail. The very low cost will surprise you. Also typing. 30th year. Schools in over 360 cities.

WRITE FOR FREE BOOKLET TO

Speedwriting ®

Dept. 1704-3, 55 W. 42 St., N. Y. 36

Play Right Away!

Now it's EASY and it's FUN to learn ANY MUSICAL INSTRUMENT—**even if you don't know a single note now.** No boring exercises. You play delightful pieces—RIGHT AWAY—**from the first lesson!** Properly—**by note.** You make amazingly rapid progress—at home, in spare time, without a teacher. Only a few cents per lesson. OVER 900,000 STUDENTS! (*Now in our 55th Successful year.*)

FREE BOOK and FREE Lesson-Sample show how easy it is. To get them, just send your name and address. No obligation; no salesman will call. **U. S. School of Music, Studio C224, Port Washington, N. Y.**

BIGGEST SHAVE NEWS IN 50 YEARS!

Just Push Valve... Out Comes Lather

- Richer, Creamier Lather
- No Brush Needed
- No Greasy Cream
- 3 Beard Softeners
- Built-in Lano-Lotion Soothes, Smooths Skin

AERO SHAVE *Lather Bomb*

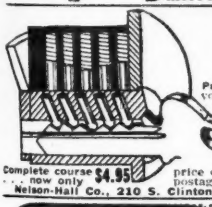
Amazing AUTOMATIC Refrigerator Defroster

PAYS SALESMEN UP TO $210 A WEEK

Leave amazing new Automatic Refrigerator Defroster on FREE Trial overnight. Come back in 3 days and collect your profits. Housewives delighted when they see how plug-in D-Frost-O-Matic ends messy defrosting forever. Free Trial Plan. Write

D-FROST-O-MATIC 173 W. Madison Street Dept. A-3, Chicago 2.

Locksmithing AND KEY MAKING *Now Made Easy!*

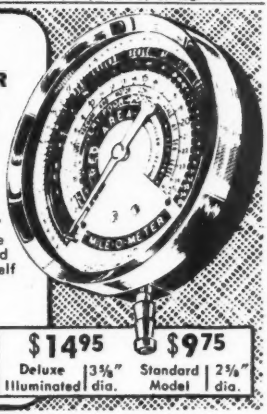


Practical up-to-date course teaches you how to pick locks, de-code, make master keys, repair, install, service, etc. New self-instruction lessons for every handyman, homeowner, carpenter, mechanic, service station operator, fix-it shop, hardware dealer, gunsmith. 53 easy illustrated lessons. Full price only $4.95 postpaid; or C.O.D. plus postage. Satisfaction or refund guaranteed.

Complete course $4.95 . . . now only
Nelson-Hall Co., 210 S. Clinton St., Dept. DX-3, Chicago 6, Ill.

SAVE GAS WITH A MILE-O-METER

Get the best mileage your car can deliver! Mile-O-Meter shows you how, warns when you're wasting gas. Continuously registers engine condition, indicates when adjustments are needed. A "must" if you want to make your own repairs and tune-ups. Pays for itself over and over again.

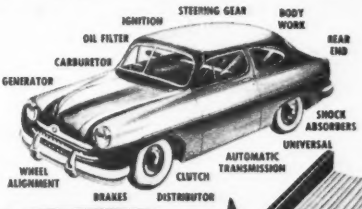


ORDER TODAY
GALE HALL ENGINEERING INC.
DEPT. 339
NORTH HAMPTON, N. H.

$14.95	$9.75
Deluxe Illuminated 3⅝" dia.	Standard Model 2⅝" dia.

HOW TO FIX ANY PART OF ANY CAR

QUICKLY--EASILY--RIGHT!



FREE 7-DAY TRIAL

WHETHER you're a beginner or an expert mechanic — now you can "breeze through" any "fix-it" job from simple carburetor adjustment to complete overhaul. Just look up job in index of MOTOR'S Big Brand-New Auto Repair Manual. Follow simple step-by-step directions, clear pictures. Presto—the job is done!

No guesswork! MOTOR'S MANUAL takes you from "scratch" — shows WHERE to start, WHAT tools to use. Covers EVERY job on EVERY car built *from 1935 thru 1952!*

Everything You Need to Know "Boiled Down" from 170 Official Shop Manuals

NEW, REVISED and ENLARGED, Edition contains the "meat" from over 170 OFFICIAL factory manuals—simplified for YOU. 38,000 essential repair specifications on 851 car models. Over 810 big pages. More than 2400 "this-is-how" pictures. 225,000 service and repair facts. Leads beginners every step of the way. Time-saving factory repair procedures for experts. Instructions and pictures so clear you CAN'T go wrong. Used by U. S. Army and Navy.

Try Book FREE 7 Days

SEND NO MONEY! Pay postman nothing. Make Manual show you what it's got. Unless you agree this is the greatest time and work saver you've ever seen—return book in 7 days and pay nothing. Mail coupon today to: MOTOR — Book Dept., Desk 34, 250 W. 55th St., New York 19, N. Y.

MOTOR'S AUTO REPAIR MANUAL

Covers 851 Models All These Makes

Buick	La Salle
Cadillac	Lincoln
Chevrolet	Mercury
Chrysler	Nash
Crosley	Nash
De Soto	Rambler
Dodge	Oldsmobile
Ford	Packard
Frazer	Plymouth
Henry J	Pontiac
Hudson	Studebaker
Kaiser	Terraplane
Lafayette	Willys

Same FREE Offer On MOTOR's Truck and Tractor Manual

Covers EVERY job on EVERY popular make gasoline truck, tractor made from 1936 thru 1952. FREE 7-Day Trial. Check proper box in coupon.

MAIL COUPON NOW FOR 7-DAY FREE TRIAL

MOTOR BOOK DEPT.
Desk 34, 250 W. 55th St., New York 19, N. Y.
Rush to me at once (check box opposite book you want):

☐ **MOTOR's** *New* **AUTO REPAIR MANUAL.** If O.K., I will remit $1 in 7 days (plus 35c delivery charges). $2 monthly for 2 months and a final payment of 95c one month after that. Otherwise I will return the book postpaid in 7 days. *(Foreign price, remit $8 cash with order.)*

☐ **MOTOR's** *New* **TRUCK & TRACTOR REPAIR MANUAL.** If O.K., I will remit $2 in 7 days, and $2 monthly for 3 months, plus 35c delivery charges with final payment. Otherwise I will return book postpaid in 7 days. *(Foreign price, remit $10 cash with order.)*

Print Name..... Age.....

Address .....

City..... State.....

☐ **Check box and save 35c delivery charge by enclosing WITH** coupon entire payment of $5.95 for Auto Repair Manual (or $8 for Truck & Tractor Repair Manual.) Same return-refund privilege.

AIR LIFT

PROTECT YOUR CAR

WITH

The Sensational Pneumatic Spring Booster

- For Overloads
- For Improved Roadability
- For Trailer Hauling
- For Sagging Springs

ECONOMICAL AND EASILY INSTALLED

Inflates with Air — Same as a Tire

Thousands in Use — Guaranteed

GIVE YOUR CAR A LIFT — WITH AIR LIFT

See Your Dealer or Write

AIR LIFT CO.

2330 W MAIN STREET

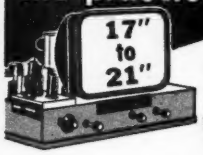
LANSING, MICHIGAN

Let me show you how EASY it is to

LEARN TV

the practical way...

D. Gnessin
Educational Director



ASSEMBLE A TRANSVISION TV KIT

Pay as You Wire $39

Down Payment

I WILL HELP YOU to start learning TV the *practical way* — by assembling a TRANSVISION TV KIT in EASY STAGES. For only $39 you get PACKAGE #1 (standard first pkg. for all of our kits). This package gives you the BASIC CHASSIS and over 450 TV COMPONENTS with complete *Instructions, Drawings, Photos, Service Booklet*, and a year's subscription to my *"TV and Electronics Notes"*. When ready, you order the *next* stage (pkg. #2), etc. Low prices make your complete kit a terrific buy!

FREE CATALOG describes 6 great new Transvision TV Kits.

Write today to D. GNESSIN, EDUCATIONAL DIRECTOR, at:

TRANSVISION, INC., Dept. MI, **NEW ROCHELLE, N. Y.**

You Can Remember

Names! Faces! Facts! Figures!

DR. BRUNO FURST

will show you how!

See:

"New Yorker" PROFILE, Feb. 23, 1946
American Magazine, July, 1947 and Dec. 1952
True Magazine, Sept. 1951

MECHANIX ILLUSTRATED, Feb. 1953

For Information, write to:

School of Memory and Concentration
Correspondence Course Division
365 West End Avenue, New York 24, N. Y.

WANT TO

Write Stories

Articles Mysteries?

FREE BOOK tells how you learn at home

The demand for writers is creating great new opportunities and it's not as hard to succeed as you may imagine. At home, you may learn fiction writing, best basis for all fields: short stories, radio & TV, articles, business items. Palmer training is endorsed by famous authors, scores of successful graduates. Complete instruction, professional coaching. FREE book and lesson show how you may enjoy an ideal part-time or full-time career. Write TODAY (no salesman will call). Approved for veterans: advise if eligible.

PALMER INSTITUTE OF AUTHORSHIP, Since 1917
1680 N. Sycamore Hollywood 28, Calif. Desk Y-43

LEARN LOCKSMITHING

Learn Locksmithing and Keymaking from Experts in Your Spare Time at Home!

Year Round Steady Income In This Permanent And Respected Field. Full Or Part Time. All Materials And Special Tools Supplied.

Send For FREE BOOKLET.

LOCK INSTITUTE, Dept. M-39
15 Park Ave. Rutherford, N. J.
Lic. by State of N. J. *V.A. Approved*

SAVE ON TIRES

Firestone GOODYEAR

GOODRICH, U. S. & OTHERS — SLIGHTLY USED

FREE TUBE WITH EACH TIRE!

FOR RUSH SHIPMENT—send Check or Money Order . . . We ship all over the world.

FINEST GRADE, 26 MONTHS GOLDEN RULE GUARANTEE BOND
THIS GRADE MADE THE BELMONT NAME "WORLD FAMOUS"

600-16	$4.95	LO-PRESSURE TRUCK TIRES (8-10-12-14 PLY)					
600-16(6)	5.75	550-15	$5.20	700-15	$ 9.90	720-20	$13.50
650-16	5.50	640-15	5.60	750-16	10.50	825-20	18.75
650-16(6)	6.95	670-15	5.65	700-17	10.75	900-20	18.75
700-16	6.75	710-15	6.45	750-17	12.50	1000-20	19.75
750-16	9.75	760-15	6.25	750-15	15.00	1100-20	20.75
525-18	5.95	800-15	6.95	825-15	15.00	1200-20	27.00
550-17	5.45	820-15	7.15	600-20	9.95	1000-22	20.25
650-15	5.35	670-16	6.75	650-20(8)	11.50	1100-22	21.50
700-15	5.35	760-16	7.50	700-20(8)	12.25	1100-24	21.50
WHITEWALLS	$1.00 ea. Extra			700-20(10)	12.50	1000-15	19.00

Buy THE "Right" TRUCK TIRES
For "Your" Job
8-10-12-14 Ply
DEPEND ON US

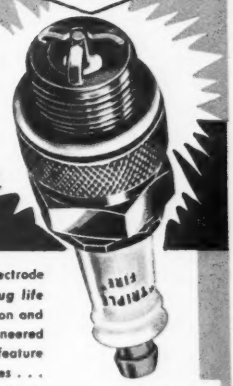
Std. Guar. 16 Mos. Rugged Guar. 30 Mos.
MILITARY MUD-SNO TREAD

750-20 Std.	$10.00	750-20 Rg.	$16.64
600-16 Std.	6.75	600-16 Rg.	9.95
900-16 Std.	10.00	900-16 Rg.	16.00

BELMONT COR. 11TH & SPRING GARDEN STS. Dept. MIR PHILADELPHIA, PA.

3 TIMES THE PUNCH!

THREE POINTS fire alternately assuring longer plug life and smooth, even combustion.



with "TRIPLE FIRE" AIRPLANE TYPE SPARK PLUGS

Repeated "break-down" tests prove Triple Fire plugs actually outlast ordinary plugs 3 to 1!

THREE TIMES THE LIFE TOO! Triple Fire's amazing three electrode design means *smoother performance, better mileage and longer plug life in your car!* Heat induced resistance causes each point to fire in rotation and each is "pointed" to deliver a hotter spark concentration. Engineered expressly for modern hi-performance engines, Triple-Fire plugs feature "Lifetime Cardo" insulators. *Battle proven in Air Force Fighter Planes . . .* this material resists heat, tetra lead shorting & etching, and absolutely eliminates high temperature fractures. Exhaustive laboratory research and grueling 50,000-mile actual road tests prove Triple Fire's *greater durability, increased efficiency,* and *higher power.* Furnished in perfectly matched sets.

DEALERS *use your letterhead to request complete information*

Postpaid, only **89¢** *each (or send 1.00 deposit per set: Bal. C.O.D.).*

20,000 MILE UNCONDITIONAL PERFORMANCE GUARANTEE

ENGINE PRODUCTS MFG. CO.
Dept. CX-4, 5801 E. Beverly Blvd.
Los Angeles 22, Calif.

Car & Yr._____ No. Cyl._____
Name_____
Address_____
City_____ State_____
Check enclosed (Ship postpaid) — Ship C.O.D. (Deposit enclosed)

Increase "gas" mileage!

10 DAY FREE TRIAL IN YOUR CAR

TEST FOR
✓ BETTER MILEAGE
✓ BETTER IDLING
✓ FASTER PICKUP

PAY ONLY IF SATISFIED!

Did you know that your engine actually uses a **richer** gasoline mixture when you take your foot off the gas pedal than when you step on it? When your engine slows down or idles, higher manifold vacuum sucks a far richer mixture through the carburetor than needed even for fast driving. At last, engineers designed the Gane Air-Flow needle to bleed air during high manifold vacuum periods and thus try to increase gas mileage. Does it work? Of the more than ½ million users, some report up to 25% more mileage, faster pickup, smoother idling. But some swear at them, say: "no improvement" and fire the "little stinkers" back to us—proving Ganes sometime fail. That's why we invite you to TRY BEFORE YOU BUY.

SEND NO MONEY! MAKE NO DEPOSIT! PAY POSTMAN NOTHING!

Just send us your name and address plus make, year & number of cylinders of your car & carburetor make (if you happen to know). Install easily in a few minutes, then check your mileage for 10 days. If you average 2 or more extra miles per gallon, send us $1.50 per needle. If you don't, send them back & owe nothing. Write:

NATIONAL AUTO RETAIL DIV.
Dept. GM-4, 9909 Santa Monica Blvd.,
Beverly Hills, Calif.

Stop Dangerous Motor Overheating!

Protect Your Engine from Rust, Scale, Corrosion, FOREVER!

Any mechanic will tell you a rust and scale clogged cooling system makes your engine lose power, waste gas, eat oil, burn out cylinders and bearings. Often you don't realize the damage until warm weather—then you may suddenly have to pay $45 to $110 for a new radiator, or $260 to repair a cracked block. Right now, **before** costly damage robs you, protect and renew your cooling system this inexpensive way: **(1)** Remove scale and rust, prevent corrosion with a Protecto Rod. Tested and recommended by **Motor Trend** magazine, this simple series of copper and zinc plates sets up a mild galvanic action which not only stops damage **permanently**, but even removes old deposits which solvents and flushing can't touch.

(2) Stop old leaks once and for all simply by pouring Leak Seal (cold solder) in radiator.

WRITE TODAY FOR NO-RISK TRIAL

For complete Radiator Kit, on 15-day trial, send only $2.98; we pay postage (heavy-duty kit for tractors, trucks, buses $4.95). If not entirely satisfied, return only Protecto Rod & get full refund; keep "Leak-Seal" for your trouble.

Satisfaction Guaranteed or Money Back!

Barlec's, **Dept. BP-4**
4872 Venice Boulevard, Los Angeles 19, Calif.

Dear Editor

Use this letters column as you see fit—make it a complaint box, question box, suggestion box or even a soap box. But use it! Our only requirement is that you sign your name and keep 'em short, interesting and clean. Address mail to: MECHANIX ILLUSTRATED, Letters Editor, 67 West 44th Street, New York 36, N. Y.

McCahill Corner

How about Tom McCahill testing the lower-priced cars that more of us can afford to buy?

James Usher
Winnipeg, Man.

How about having some reports on some expensive cars, Cadillacs and Chryslers?

Allan Thomas
Litchfield, Minn.

Please ask Old Baldy to try a motorcycle.

Ray Hansen
Glendale, N. Y.

This is as close as we could come to getting Uncle Tom on a motorcycle. Close enough?

Trouble With Skirts

Since I read your magazine and you always have good automobile hints in it, I was wondering if you could help me solve my problem. I own a 1950 Ford and, to the disgust of my insurance company and myself, I have had three sets of fender skirts stolen. I would appreciate any suggestions as to how to keep them on, besides welding them.

Pvt. Robert G. Ruter
Fort Sam Houston, Tex.

Ever try embroidering some fresh poison ivy along the hemline?

April MI Mystery

A man has $50 in the bank. He withdraws it as here shown:

Withdrawal		Balance
$20	leaving	$30
$15	leaving	$15
$9	leaving	$6
$6	leaving	$0
$50		$51

Where does the extra dollar come from?

Robert Pence
Bluffton, Ind.

We also got the same problem from Dennis Boyer of Fort Atkinson, Iowa. Anybody know the answer?

More Practical Inventions

There's something wrong with readers McCormick and Hanson if they have nothing better to do but invent portable holes-in-the-ground, or cactus with stickers on the inside.

Now, I've invented something useful—dehydrated water. Put some in a glass, add water and—presto! It's a great thing to have during a water shortage.

I'm also working on dehydrated dryness, to be used during floods.

Richard Stark
Bronx, N. Y.

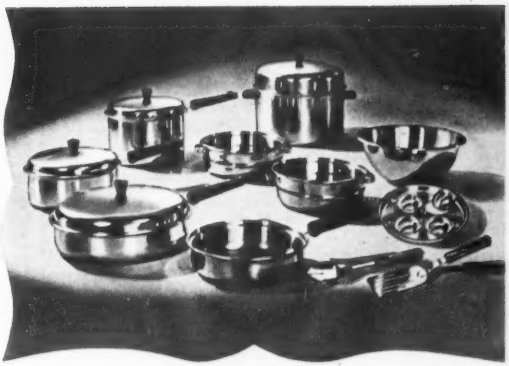
Danger, Men At Work

I would like to call your attention to one occupation which I did not observe in the article Danger, Men At Work (February 1953 MI), which is crop or cotton dusting with a biplane. More especially is this dangerous because the pilot must fly at cotton-top level and many times he has to go under and over high-tension wires, over trees and sometimes between them.

Although I practice law as a profession, my favorite hobby is mechanics. I find your

[*Continued on page* 33]

I have a good proposition for men or women who would like to make an extra $125.00 a month for spare time



These 15 Utensils and covers are all interchangeable. They fit into each other so as to make up 21 different cooking combinations for "Waterless Cooking." The four extra egg cups and the Spoon and Cake Turner make a 19-piece set that covers 99% of all cooking needs.

By F. H. Strong

I won't make any fancy promises of $50.00 a day. And I'm not after any of your money. What I can do is show you a simple plan by which you can pick up enough extra money every week to help make up for the money you're losing in higher taxes and higher costs of living. And I supply your working outfit free—no charge and no deposit. Just your name is all I need. Read my proposition. It is honest and down to earth. And it won't cost you anything to try it.

TODAY almost everyone needs extra money. Increased taxes and increased living costs are making your dollar worth less and less, so you have to have more and more dollars just to keep even. There are lots of good ways to make extra money. I don't say my way is the best. I do say it's one of the easiest and most pleasant. It even leads to making new friends in sort of an endless chain. It doesn't call for house-to-house canvassing, either. Let me explain:

I am Sales Manager for a very big company. We make stainless Steel Cooking Utensils. We do an enormous business with hotels, restaurants, hospitals, and institutions. We also make utensils for the Army, Navy, and Air Force.

As a result, we have very low manufacturing costs. We can **sell** a set of Stainless Steel Cookware for home use for about what it costs some companies **to make it!** In fact, for years we did sell to one Sales Organization who resold our cookware house to house under their own name. They got $120.00 for the same set that our people sell for less than half of that.

You've probably heard of salesmen who give dinner parties in homes and then take orders from the ladies who attend. These salesmen have to get a high price because it costs money to give parties—he has to make his share—and his supervisor has to make his. The sales organization comes in for a share and the manufacturer who sells to them has to make his. So there are about five profits added to the actual manufacturing cost.

About two years ago I got to figuring. There are five good reasons why Stainless Steel is the kind of cookware that should be in every home. 1. It washes as easy as a drinking glass. No scouring, scraping or scrubbing. 2. It doesn't rust or corrode—and it doesn't stain. 3. It doesn't affect the taste of food. 4. Buy it once and you're all through buying for life. You **can't** wear it out.

You see, Stainless Steel is not a coated or plated metal, like chromium plate on the bumper of your car. That chromium plate can chip or wear off and exposes the raw steel underneath. Then the steel rusts. But our kind of Stainless Steel is stainless **all the way through.** It can't chip, crack, peel, or wear off. You could use a set the rest of your lifetime and then give it to your children and it would still be good for **their** children. 5. Carlton Ware enables you to prepare food by the method called "waterless cooking" which keeps more of the natural minerals and vitamins in your food and makes the food taste better.

Well, I figured that if the price was low enough every family could afford Stainless Steel Carlton Ware. So I worked out this plan! We would sell a complete set of 19 pieces at a figure that would include our profit. Then you add your profit and re-sell this set to your friends and neighbors for less than half of the usual price charged on the "party plan." You actually save them more than half. They are glad to get such a bargain and they feel that you've done them a real favor. That's because the set they buy has in it only two profits, ours and yours. Both our profit and your profit is small and fair.

The plan becomes like an endless chain. When a woman gets her first piece of Carlton Ware she gets so thrilled with its better cooking and easy cleaning that she talks and talks. She can't wait to demonstrate it to her friends and tell them all about it. She's so proud of its silvery sheen and so happy about how easily it washes that she just "bubbles over." So just by letting **your own friends** in on a good thing, before you know it **their** friends call you up and ask if you can get the same low prices for them. Then **their** friends call you and their **friends' friends.** It goes on and on!

To make an extra $125.00 a month, you only have to deliver ten sets and that's easy. Mrs. Montell in Pennsylvania took orders for $1400.00 worth in her first month. And Mrs. William Hanchow wrote, "Got my set Saturday—I already have 17 customers."

Now, I'll let you in on another part of my plan. If you take only ten set orders a month for six months my company pays your expenses for a winter vacation in Florida. You and one other member of your family can spend a whole week at our expense. My company maintains a beautiful resort in the Florida Keys just so our sales representatives can enjoy a Florida vacation at company expense.

Get all the information right now. I'll not only be glad to send Free Information. I'll also send you a complete demonstrating outfit that you can show to your friends and neighbors. And I'll give you exact instructions by which you can write up orders without ever trying to "sell" and without making any house-to-house calls.

Everything I send you is free. When you qualify, I'll even furnish you with a complete 19-piece set of Carlton Ware to use in your own kitchen and show to your friends. It's an extra bonus I give to encourage good earnings on your part.

Send your name today in confidence. You'll be glad you wrote. This ad may not appear in this magazine again, so don't take any chances on losing out. Send the coupon or just send your name on a postcard. I won't send any salesmen to call on you and you won't be under the slightest obligation.

F. H. STRONG

Carlton of Carrollton—Carrollton, Ohio

F. H. Strong, Carlton of Carrollton
Carrollton, Ohio

Dear Mr. Strong: Please send me free and without any obligation whatever a complete selling and demonstrating outfit with exact instructions for making an extra $125 a month. I don't want to do any house-to-house selling, but I will show your products to my friends and give them the advantage of the low prices.

Name.....

Address.....

City.....*Zone*.....*State*.....

☐ I am already selling Cookware and am interested in getting a line that can be sold at a lower price. Please send me your Distributor's proposition.

GROW Living MIDGET TREES!

EARN $10.00 PER HOUR!

- AT HOME
- IN SPARE TIME
- NO EXPERIENCE NEEDED

It's new! Amazing! At last, the secret of growing miniature (MING) trees can be yours. FULL GROWN, dwarf trees — only a few inches high. Beautiful miniature fir, orange, oak, Chinese elm, peach, pine, cypress—any kind! ALL BLOOM and even BEAR FRUIT. All perfect healthy specimens—but miniature in size! Make costly home decorations and expensive centerpieces. (SOLD FOR OVER $1,500 EACH) Big demand. Costs only pennies—takes only minutes per week. IT'S EASY! Fun! A new fascinating hobby—a new fabulous $$$$ business. Send for free secret plan details and real seed.

HELP US FILL HUGE DEMAND!

These trees are being demanded by STORES CLUBS • HOTELS • FLORISTS • HOUSEWIVES • INTERIOR DECORATORS • COLLECTORS • HOBBYISTS — A Big Money Opportunity FOR YOU.

FREE! GENUINE SEED AND PLAN!

NATIONAL NURSERY GARDENS Dept. T4
8463 So. Van Ness,
Inglewood 4, California
Rush me FREE plan and seed IMMEDIATELY!

Name _____
Address _____ Zone _____
City _____ State _____

MEN! TRAIN NOW FOR A BIG PAY FUTURE IN DIESEL & SCIENTIFIC MOTOR TUNE-UP

- Diesel Construction
- Diesel Engine Repairman
- Diesel Operator
- Industrial Maintenance
- Auto Engine Rebuilding
- Bus & Truck Maintenance

Be a Trained Diesel Man

Go places with DIESEL! Farms, factories and power plants, trains, ships, trucks, busses all use DIESEL POWER . . . all need DIESEL-trained men! You can start your DIESEL training at home, in spare time, with tested, proved U E I training. Course includes practical work on Diesel engines under skilled instructors. You learn the operation, maintenance, servicing of all types of Diesel engines, PLUS Scientific Motor Tune-up.

ACT NOW! If you have mechanical ability, you'll like Diesel! High School diploma not necessary. Write now for FREE book, "EARNING POWER IN DIESEL." Act Today!

MAIL NOW FOR FREE BOOK!

UTILITIES ENGINEERING INSTITUTE, Dept. DJ-21
2521 Sheffield Ave., Chicago 14, Ill. (Founded 1927)
O.K.! Rush, without obligation, FREE Book on DIESEL.

NAME _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____
☐ Check here for information if under 17.

WAR SURPLUS BARGAINS

$500,000.00 INVENTORY for QUICK LIQUIDATION

Surplus items—hundreds of them for home, shop, factory, farm and outdoors use. New items, used items, reconditioned items—all at tremendous savings—all priced for quick sale.

Page After Page of Values

This big catalog shows page after page of amazing money saving values. Write for your copy today. Send 10c to cover postage, mailing, etc. Write today!

SEND TODAY FOR YOUR COPY **10c**

STARK'S Dept. MI-453 509 So. STATE STREET CHICAGO 5, ILLINOIS

CAR OWNERSHIP COSTS LESS WITH A HULL AUTO COMPASS

It's easy to make a wrong turn without a Hull Auto Compass, drive blocks or miles before getting straightened out. Wasted miles add up amazingly . . . which is why a Hull Auto Compass pays for itself over and over. Write for local dealer's name, free literature.

MORE HULLS IN USE THAN ALL OTHERS COMBINED

HULL MFG. CO. P.O. Box 246-M3 WARREN, OHIO

Beacon Lite $6.95 ILLUMINATED
STREAMLINE $4.95 STANDARD (not illum.)

How to Make Money in PHOTOGRAPHY

If you are OVER 17—good pay, fascinating work awaits you in photography! Start making money quickly in spare-time—step into your own studio or exciting job. LEARN-BY-DOING method trains you at home! Write TODAY for FREE catalog. Also Resident Training. 43rd Year. GI Approved.

Send for FREE BOOK

NEW YORK INSTITUTE OF PHOTOGRAPHY
Dept. 153, 10 W. 33 St., New York 1, N. Y.

RAISE RABBITS

A FULL TIME BUSINESS OR WELL PAID HOBBY

Thousands of Raisers Needed To Meet The Tremendous Demand For MEAT FUR—LABORATORY—BREEDING STOCK.

Know the Facts Illustrated Book Describing 25 Breeds, Breeding and Care, Markets, Etc. 10 Cents. We Are Association of Breeders who want to see you *start right!*

AMERICAN RABBIT ASS'N. 53 ARBA Bldg., Pittsburgh, Pa.

MAKE EXTRA MONEY **PLASTICS** LEARN AT HOME

LEARN HOW TO MAKE fast-selling PLASTIC NOVELTIES FURNITURE JEWELRY SIGNS TOYS LAMPS

There are RICH OPPORTUNITIES for MEN and WOMEN with "know-how" in Plastics. Interstate's new Plastics course tells and shows how to make hundreds of fast selling items out of Plastics. Gives complete training in fabrication, casting, lamination, molding, internal carving, etc., in simple, easy, step-by-step language and pictures. Plastics and Fabricating Kits for 23 valuable Plastic items come with training at no extra cost. START A PLASTICS BUSINESS OF YOUR OWN. No other industry holds such promise for the future. You can make big money manufacturing novelties, toys, signs, etc., in your own home in spare or full time. Don't wait! Learn NOW How Interstate's Plastics Training qualifies you for success in the Plastics field.

PLASTICS AND SUPPLIES FURNISHED FOR 23 VALUABLE PROJECTS

INTERSTATE TRAINING SERVICE
Dept. C-4D Portland 13, Oregon

Dear Editor—

[*Continued from page* 30]

magazine very helpful along this line, as well as educational and entertaining.

Alex Barnett
Memphis, Tenn.

Another Tough One

Will you tell me the make, year, etc., of this old automobile? If you do not know, will you ask your customers if they know the name of it?

Charles E. Doyle
Beatrice, Neb.

Customers, to the rescue!

Safety Belts For Cars?

As an ambulance operator I have had occasion to remove many persons from the wreckage of automobiles . . . have seen the effects of practically all types of accidents over the past twelve years, including many where a car struck another head-on or collided with a relatively immovable object with considerable force.

In very few of these cases would a safety belt have been of any real protection to the driver, simply because the American manufacturer has seen fit to install a flimsy seat adjustment device which will almost never permit the front seat to stay put in the event of an accident.

I feel that the idea of the safety belt is excellent. But let's keep the seat in its proper position before adding belts to passenger cars.

Charles P. Gillen
Warren, O.

World's Most Complete!
1953 ALLIED
TV & RADIO CATALOG
FREE!
Everything in TV & Radio
At Lowest Prices

236 PAGES
VALUE-
PACKED

Everything for
Experimenters,
Builders,
Amateurs,
Servicemen,
Engineers, Soundmen

Send for ALLIED's big 236-page value-packed guide to *everything* in TV and Radio! Custom TV chassis, TV accessories, FM and AM radios, Amateur supplies, High-Fidelity Sound, P. A. Systems, recorders, test instruments, builders' kits—plus the world's largest stocks of electronic parts, tubes, tools and books. Get more for your money—send today for your FREE 1953 ALLIED Electronics Catalog!

SEND FOR
FREE
CATALOG

ALLIED RADIO

ALLIED RADIO CORP., Dept. 6-D-3
833 W. Jackson Blvd., Chicago 7, Illinois

☐ Rush FREE 1953 ALLIED 236-Page Catalog.

*Name*_____

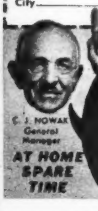
*Address*_____

*City*_____ *Zone*____ *State*_____

FREE BOOK AND ACTUAL SAMPLE

Screen Print, Dept. 34
1010 So. Los Angeles St.
Los Angeles 15, California
Dear Mr. Nowak: Please rush me FREE BOOK, ACTUAL SAMPLES, and your amazing new PRINTING PLAN

Name _____
Address _____
City _____ State _____



C. J. NOWAK
General Manager

AT HOME SPARE TIME

IT'S AMAZING! I'll show you how to make up to $12.50 per hour

PRINTING
WITHOUT A PRINTING PRESS

Print of all kinds
PRINT BUSINESS
PRINT FARMERS
PRINT INSTRUMENTS
PRINT SIGNS
FOR SALE

AMAZING NEW COLOR PRINTING METHOD

A fascinating new miracle-way to print—a secret method that lets you print colorful signs, posters, banners, drapes, wallpaper, flags, glass, fabrics—ANYTHING without an expensive printing press or costly equipment. This new process is revolutionizing the entire printing industry—it's one of America's fastest-growing businesses—it's your "chance of a lifetime" to make Big Money Now! Be the FIRST in your area to profit. The secret can be yours—just mail the coupon above today!

EASY TO LEARN! NO EXPERIENCE NECESSARY! Simple fascinating method! No artistic ability needed. It's possible for anyone (young or old) to make up to $50 PER WEEK printing in SPARE TIME alone—AT HOME!

START YOUR OWN BUSINESS—BE YOUR OWN BOSS Wouldn't you be happy if you could take only one hour of your time and $1.00 worth of materials—and sell your printing for $15 or more. It's that easy! It's amazing! Your home can be your office—No selling because there's a huge demand everywhere. GOVERNMENT CONTRACTS AVAILABLE TO BID. Biggest opportunity in America—costs you nothing to receive all CONFIDENTIAL FACTS — Mail coupon today!

SCREEN-PRINT
1010 S. Los Angeles St., Los Angeles 15, California

YOU CAN PRINT ANYTHING WITH SCREEN PRINT

YOUR NEIGHBORS TAKE THEM AWAY FROM YOU AT

$7.95 You make as high as $4 on each sale

Automatic defroster attaches to any refrigerator in 10 seconds

Millions sold at $12.50 and $9.95. Now—at $7.95 the HOLWIN—guaranteed for two years—is hitting such high sales peaks that we GUARANTEE YOUR SALES! Don't peddle from house to house. We'll send one for your refrigerator. Demonstrate it to friends and neighbors who drop in. Every sale makes two or three more. We show you how to appoint neighbors as your agents—get them working for you.

FREE Complete sales kit free—also offer of sample demonstrator for your own refrigerator. No money. Rush name today for selling plan that brings people to you. At $7.95 they'll take them away from you. Hurry. This is big, right now. Send name today.

Defroster Sales Co., 415 N. La Salle St., Dept. H-104, Chicago 10, Ill.

MONEY for MEN ALL DATA FREE

THE PLASTEX Industry needs manufacturers on small scale and for big production of Lamp and Clock Stands, Art Goods and Novelties in Plastex and Marble imitation. Experience unnecessary. 1/2c material makes regular 10c store sellers. Rubber molds furnished for speed production. Small investment brings good returns. We are now placing big chain store orders with manufacturers. Ambitious men have chance for real prosperity. Our free booklet will interest and benefit you.

PLASTEX INDUSTRIES, DEPT. 3
3400 THIRD AVE., NEW YORK 56, N. Y.

HE-MAN VOICE!

STRENGTHEN your voice this tested scientific way. Yes—you may now be able to improve the POWER of your speaking and singing voice . . . in the privacy of your own room! Self-training lessons, mostly silent. No music required.

FREE BOOK Write TODAY for Eugene Feuchtinger's great booklet "How to Develop a Successful Voice." It's absolutely FREE! You must state your age. Booklet mailed postpaid in plain wrapper. No salesman will call. Send your name and age RIGHT NOW!

Prefect Voice Institute, 210 S. Clinton St., Studio DX-3, Chicago 6, Ill.

OLD TIMERS—The Collectors' Pride!

1902 "AIR COOLED" FRANKLIN
Kit with instructions $2.50
Length 7"

The most discriminating builder, who demands authenticity in models, will marvel at the true scale and precision of these original "OLD TIMERS" antique Auto Kits.

"OLD TIMERS" are sold at leading Hobby, Toy and Department Stores. When ordering direct add 25c for postage and handling.

15 Additional "OLD TIMERS" Kits to choose from. Write for free catalog.

1914 STUTZ BEARCAT
Length 10¾" Kit $3.95

1903 CADILLAC
Length 7" Kit $2.50

OLD TIMERS
SCRANTON HOBBY CENTER
Dept. D12, 315 Adams Ave.
Scranton 10, Pa.

TOOLS AT WHOLESALE

PROFESSIONAL MECHANICS HAND TOOLS
Farm, Household and Special Tools
TOP QUALITY, FACTORY GUARANTEED

Write Today for FREE CATALOG

MECHANICS CO-OP
Dept. N Oakland 8, Calif.

PEEL 6-10 FT. OF PAINT PER MINUTE

Down to Bare Wood...

PAINT DOZER
$9.95 *complete*

You can peel paint fast and easily! With Paint Dozer you soften and peel old paint in one continuous stripping action. You get a clean, bare surface ready for repainting. And, there's no hard scraping, no messy or dangerous chemicals or flame!

In tests, Paint Dozer peeled 43 coats of paint in *one* stroke!

Flat, curved or grooved surfaces . . . house siding, boats, cabinets, floors, woodwork . . . you can peel them all better and easier with Paint Dozer!

Paint Dozer operates on 115-120V A.C. or D.C. household current. Its sturdy stamped-steel casing and heavy-duty ceramic element assure long life, even under daily use.

Order from your hardware or paint store, or write today for fast delivery. *You must be satisfied or your money back!*

LECTRO DIVISION, OTTO KONIGSLOW MFG., CO.
Dept. 4-B, 2189 West 26th Street • Cleveland 13, Ohio

MIscellany

Polka Dot Billfold

Designed by Lilly Dache, this billfold is made of embossed Vinylite plastic. Stains and finger smudges are removed with a sponge, and seams resist tearing because they are heat-sealed. It has a removable pass case containing four windows, secret pocket for bills, button-down coin purse. Aristocrat Leather Products, Incorporated, 292 Fifth Avenue, New York 1, N. Y.

Taut Clotheslines

Monroe Tie secures clothesline in five seconds. Line is passed through tie, pulled taut and secured in lock slot. By pulling rope from slot, line can be taken down. It is made from heavy gauge steel plated to prevent rusting. General Tool, 1226 E. Mich. Ave., Kalamazoo.

[Continued on page 37]

NEW BODIES FOR OLD!

I've Made New Men Out of Thousands of Other Fellows...

"Here's what I did for THOMAS MANFRE... and what I can do for you!"

—Charles Atlas

GIVE me a pepless, second rate body—and I'll cram it so full of handsome new muscle that your friends will grow bug-eyed! . . . I'll wake up that sleeping energy of yours and make it hum like a high-powered motor! Man, you'll **feel** and **look** different! You'll begin to **LIVE!**

Let Me Make YOU a NEW MAN —IN JUST 15 MINUTES A DAY

YOU wouldn't believe it, but I myself used to be a 97-lb. weakling. Fellows called me "Skinny." Girls made fun of me behind my back.

THEN I discovered my marvelous new muscle-building system—"**Dynamic Tension.**" It turned me into such a specimen of MANHOOD that today I hold the title "THE WORLD'S MOST PERFECTLY DEVELOPED MAN."

What is "Dynamic Tension"?

When you look in the mirror and see a healthy, husky fellow smiling back at you—then you'll realize how fast "**Dynamic Tension**" GETS RESULTS!

"**Dynamic Tension**" is the easy, NATURAL method you can practice in your own room—JUST 15 MINUTES A DAY—while your chest and shoulder muscles begin to swell . . . those arms and legs of yours bulge . . . and your whole body starts to feel "alive," full of zip and go!

FREE My 32-Page Illustrated Book is Yours —Not $1 or 10c—But FREE

Send NOW for my famous book "Everlasting Health and Strength," 32 pages, packed with photographs, valuable advice, answers many vital questions. This book is a **real prize** for any fellow. Yet I'll send you a copy absolutely FREE. Just glancing through it may change your life! Rush coupon to me personally: **Charles Atlas, Dept. 64, 115 East 23rd St., New York 10, N. Y.**

CHARLES ATLAS, Dept. 64
115 East 23rd St., New York 10, N. Y.

Send me—absolutely FREE—a copy of your famous book, "Everlasting Health and Strength!"—32 pages, crammed with photographs, answers to vital health questions, and valuable advice. I understand this book is mine to keep, and sending for it does not obligate me in any way.

Name_____ Age____
(Please print or write plainly)
Address_____
City_____ State_____

BREED *Rare* TROPICAL FISH

IT'S EASY!

Once you learn the fascinating secrets you can breed: "Tetras" that LIGHT UP like Neon Signs. "Gourami" that are 12 DIFFERENT COLORS, "Fighting Fish" THAT FIGHT UNTIL DEATH, "Zebra Fish,"—hundreds of Beautiful Rare varieties. *Fabulous Profits possible!* Mail Order Plan you know how. *We supply everything you need.*

AMAZING NEW HOME—BUSINESS! WONDERFUL OPPORTUNITY! FASCINATING ADVENTURE once you know the "Secrets" of breeding and selling rare Tropical Fish. Some sell for $75 pair and more! NO BIG INVESTMENT—NO EXPERIENCE NECESSARY! It's fun to breed expensive fish in your home, basement, or garage. Takes only minutes per day. Earn extra money in leisure time once

GET INTO PARTNERSHIP WITH NATURE. Let Nature Multiply your profits for you. Some Fish lay 300—600 eggs at one time.

HELP FILL HUGE DEMANDS—from Stores, Hotels, Interior Decorators, Schools, Restaurants, Offices, Theatres, Doctors, etc. etc. Also over 20,000,000 Tropical Fish fanciers in the U. S. to sell! *No big Companies to compete with.* Amazing opportunities for Home Breeders or Full-Time Breeders.

YOUR "CHANCE OF A LIFETIME" OPPORTUNITY. If you wish to combine pennies with spare time—*to make dollars in profit.*

HOME-BUSINESS PLAN FREE!

Complete Illustrated Home—business plan, colorful Breeding Brochure, Reprints, etc., etc.

WRITE: TROPICAL FISH BREEDERS OF AMERICA
Dept. E-4, Los Angeles 15, Calif.
Rush everything free to:

Name _____
Address _____
City _____ State _____

FREE!

Valuable U. S. Commemorative Set of

17 HISTORY IN THE MAKING STAMPS

SENT *FREE* TO SECURE NAMES FOR OUR MAILING LIST

Mail Coupon to Get These 4 Stamps *plus* 13 OTHER GREAT U. S. STAMPS FREE!

Mail coupon at once. We'll send you this fascinating set of 17 famous historic U. S. stamps. NO COST TO YOU! Each stamp has exciting story behind it. Each stamp is worth REAL MONEY. All large stamps. But you must act fast. Supply limited. Don't ask for more than one set. We'll also include other interesting offers for your inspection—PLUS a FREE copy of our helpful informative book, "How to Collect Stamps." This offer may have to be withdrawn soon—so rush coupon with 10c to help cover postage and handling to: **Littleton Stamp Co., Dept. 4-MI, Littleton, N. H.**

Littleton Stamp Co., Dept. 4-MI, Littleton, N. H.
Send—FREE—17 historic U. S. stamps and informative booklet, "How to Collect Stamps." I enclose 10c to help cover actual postage and handling costs.

Name _____
Address _____
City _____ State _____

LEFAX POCKET SIZE TECHNICAL DATA BOOKS $1 EACH

Printed on loose leaf, six hole, 6¾" x 3¾" bond paper, each book contains about 140 pages of technical data, presenting condensed, accurate and essential data for the student, engineer, technical worker and business man.

Architecture	Phys. & Thermodyn. Data	Transformers, Relays, Meters
Home Heating	Phys. & Org. Chemistry	Hydraulics
Illumination	Metals	Surveying
Electrician's Data	General Chemistry	Mechanical Drawing
Builder's Data	Reinforced Concrete	Machine Design
Lumber Data	Building Constr.	Machinists Data
Air Conditioning	Radio	Piping Data
General Math.	Television & FM	Surveying Tables
Math. Tables	Electricity, AC	Trig-Log Tables
Physics	Electricity, DC	Metallurgy
Chemical Tables	AC Motors and Generators	Analytic Chemistry
Mechanics of Materials		Highway Engineering
Power Trans. Mach'y.		
Thermodynamic Tables & Charts		

Write for FREE catalogs (over 2000 listings). See for yourself how helpful LEFAX can be to you. Send $1 for each book, (or $5 for any six books listed above) to

LEFAX DEPT. MI-12 PHILADELPHIA 7, PA.

OIL FROM THE PUBLIC LANDS

Get the amazing story of how U. S. citizens can file for oil rights on public land in the West. Profits made as high as $250,000 for $250; $11,000 monthly for $200. We select lands in possible oil areas, show you how to file. Send for free booklet.

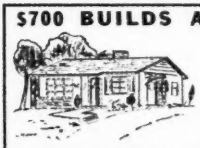
CALIFORNIA LEASE CO.
7075MI Hollywood Blvd., Los Angeles 28, Calif.

make your own *Gems* 29.50 F.O.B.

The Gem Maker comes complete with all necessary equipment, including a super-charged diamond blade for sawing, and all wheels for grinding, shaping and polishing; also complete instructions. The complete equipment as shown, less motor and belt, for only $29.50, f.o.b., Burlington, Wisconsin. Write today for information and literature.

B&I MANUFACTURING CO.
Dept. E, Burlington, Wis.

$700 BUILDS ATTRACTIVE HOME



Living Room 14x15', Bed Rooms 12x13' and 9x12', Bath 5x8', Kitchen and Dinette 10x11', 3 closets and hallway; complete plumbing and lights. We think we have the answer to low cost housing in this country. Give us a chance to prove it to you.

$1.00 brings you 25 pages of step-by-step instruction (18 drawings) and material list, showing how to cut building costs in half.

IDEAL HOMES, P. O. Box 7026, Tampa 3, Fla.

SAVE MONEY! Prevent Costly Repairs!

Detek-Tro-Lex

Gives You Immediate Warning of Dangerous Electrical Faults

Dial shows battery state of charge, faulty cells, hot generator, defects in voltage regulator; loose connections, short circuits. Gives advance warning, preventing costly repairs. Easily installed. Fully guaranteed. At your dealer's or order direct . . . $13.75 postpaid (cash with order); specify 12-volt or 6-volt.

IMPORTED MOTOR CAR CO.
228 E. PENN ST. • HOOPESTON, ILLINOIS

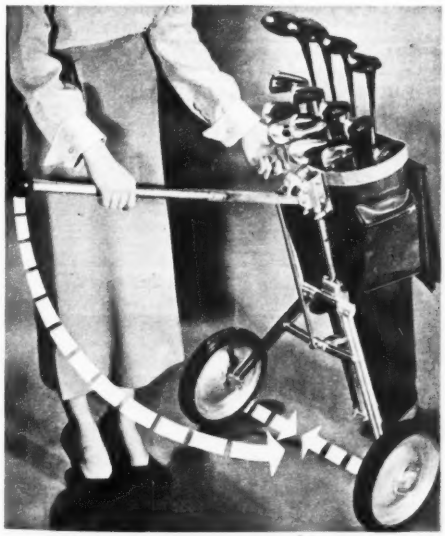
MIscellany

continued from page 35

O'BRIEN GUNCRAFT

The .357 Magnum, favorite sidearm of the FBI, is the latest fascinating gun model to be supplied in kit form by O'Brien Guncraft of Madison, Wisconsin. Series contains ten models in all. Parts are of wood, completely machined by the manufacturer and ready for at-home assembly and gun-blue finish is provided.

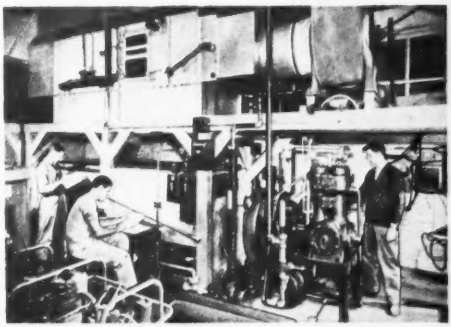
Collapsible Golf Cart



The Chamberlin Honeycomb Bag Ko-Lap Si Kart, made of Tolex, a plastic waterproof material, can be folded by lifting a latch and dropping the cart handle. The rubber club divider keeps the clubs in the same positions and the cushion base prevents damage to the handles. There's room for balls, sweaters, and lunches. Chamberlin Metal, 1466 W. Madison Street, Chicago.

BECOME A

Mechanical Engineer



B. S. Degree in 36 months

Mechanical Engineers hold respected, well-paying, and highly interesting jobs in many fields of industry. You can prepare now for a secure future as an engineer or engineering technician.

Check from these Courses

ENGINEERING 36 months, Bachelor of Science Degree

- Mechanical Engineering with a major in Design, Metal Fabrication or Plant Engineering.
- Electrical Engineering with a major in Electronics or Power.

SERVICE 6 to 12 months

- Electricity
- Heating
- Refrigeration
- Welding

TECHNICIAN 12 to 18 months

- Radio and Television
- Electronics
- Electrical Power
- Mechanical Technician
- Air Conditioning
- Welding

General preparatory course — 3 months.

TERMS OPEN APRIL, JULY, OCTOBER, JANUARY

Faculty of specialists. Over 50,000 former students. Annual enrollment from 48 states and 23 overseas countries. *Non-profit. 50th year.* Military, Practical or Academic training evaluated for advanced credit. Approved for Veterans. Write for details today.

MILWAUKEE
SCHOOL OF ENGINEERING

MILWAUKEE SCHOOL OF ENGINEERING
Dept. MI-453, 1025 N. Milwaukee
Milwaukee 1, Wisconsin

Send Catalog describing Mechanical Engineering course.

I am also interested in:_____
name of course

Name_____ Age_____

Address_____

City_____ Zone_____ State_____

If veteran, indicate date of discharge_____

PREPARE FOR BETTER JOB, BIGGER PAY IN SPARE TIME AT HOME

Today, choose the job you want—and prepare for it in time you might otherwise waste. Or if you are already in the work you like best, start training now for quicker promotion and increased pay. During more than 50 years AMERICAN SCHOOL has helped ambitious people to reach higher goals. Check subject that interests you and mail coupon for full information.

AMERICAN SCHOOL, Dept. G425, Drexel at 58th, Chicago 37, Ill.
Without obligation, please send FREE and postpaid, full particulars about the subject checked below.

- ☐ Accounting
- ☐ Air Conditioning
- ☐ Architecture & Building
- ☐ Automotive Technician
- ☐ Better Foremanship
- ☐ Bookkeeping
- ☐ Business Management
- ☐ Contracting
- ☐ Diesel Technician
- ☐ Drafting—Building Trades
- ☐ Drafting—Machine Trades
- ☐ Electrical Engineering
- ☐ Electricity—Practical
- ☐ Electronics—Industrial
- ☐ High School Courses
- ☐ Machine Shop Operations
- ☐ Mathematics & Slide Rule
- ☐ Mechanical Engineering
- ☐ Plastics Engineering
- ☐ Plumbing—Practical
- ☐ Private Secretary
- ☐ Refrigeration
- ☐ Retail Merchandising
- ☐ Salesmanship—Outside
- ☐ Sheet Metal Work
- ☐ Tool Making

NAME ..... OCCUPATION ..... AGE .....
HOME ADDRESS ..... STATE .....
CITY .....

MAIL COUPON NOW

Another NORTHROP Graduate Chooses Jet Engine Career

Like many other Northrop Aeronautical Institute graduates, Keith Englebart chose the fascinating field of jet engines for his career. He's moving ahead rapidly, thanks to his thorough, practical training at NAI. Already he's won recognition for helping set up a new type of test stand for jet engine fuel systems!

NORTHROP can help YOU to Aviation Success! It's the man with knowledge and training who gets **rapid promotion**—the big share of **important work.** Lack of training can penalize your chance for success in the rapidly changing aviation science. **Northrop Aeronautical Institute** gives you the background—helps you make the most of opportunity!

Your NORTHROP Diploma—a passport to Opportunity! Northrop graduates are sought by concerns throughout the aviation industry. The demand is so great, **Northrop graduates have their choice of interesting, exciting, profitable jobs prior to graduation!**

Begin Your Aviation Career at NORTHROP! Northrop Aeronautical Institute, a division of Northrop Aircraft, Inc., is an accredited technical school open to public enrollment offering up-to-the-minute courses in **Aeronautical Engineering and Aircraft & Engine Mechanics.** Write **today** for complete enrollment information and a fully illustrated catalog showing the modern **Northrop** training facilities. **There is no obligation!**

ATTENTION KOREA VETERANS Northrop Aeronautical Institute is fully approved for your training and for all other veteran training.

Northrop Aeronautical Institute

1523 E. Broadway, Hawthorne, Los Angeles County, Calif.

SEND FOR FREE ILLUSTRATED CATALOG

NORTHROP AERONAUTICAL INSTITUTE
1523 E. Broadway, Hawthorne, Los Angeles County, Calif.

Please send me immediately the Northrop catalog, employment data, and schedule of starting dates of classes. I am interested in:
☐ Aeronautical Engineering ★ Aircraft & Engine Mechanics ☐

Name ..... Age .....
Address .....
City ..... Zone ..... State .....
VETERANS: ☐ Check here for Special Veteran Training Information

STOPS OIL BURNING! Restores POWER & ZIP!

HOW TO SEAL THOSE PISTONS PACK 'EM WITH POWER!

SAVE $75 *Overhaul Your Car in 10 Minutes!*

AT YOUR HOME FOR JUST $3.95 postpaid

MORE GAS MILEAGE OR YOUR MONEY BACK—

Fisher's Compression SEAL in the big tube is now used by over 100,000 drivers who made the simple application in their garages—put $50 to $100 apiece they saved in their pockets.

BLUE-BRONZE PLATE—F. C. S. and only F. C. S. contains tough, resilient blue-bronze Fisherite which builds up evenly and seals excessive clearance between piston and bore. It **plates** and **seals** your pistons while you drive. SIMPLE TO APPLY—Remove plugs, squeeze specified amount into each cylinder, replace plugs and drive. Simple! You bet!

SEND $3.95 TODAY in check, cash or M.O. COD's accepted!

ADVANCED ENGINEERING BOX 7013 Los Angeles 37, Calif. Dept. MI-4

Advanced Design Low Prices

VIKING Garden Tractors and Power Mowers

A practical, soundly engineered line of tractors for gardens, small farms, suburban and country homes. New advanced features. One and Two Wheel models.

WALK OR RIDE
Wide Range of Attachments
Write Today FREE CATALOG Easy Terms
AMERICAN FARM MACHINERY COMPANY
1039 33rd Avenue S. E. Minneapolis, Minnesota

BATTERIES START A FACTORY AT HOME

—and re-cast junk batteries into new, with and without new materials; the latest achievement. We supply complete instructions and everything needed. Large daily profits.

BATTERY LABORATORY SCHOOL
DEPT. MI, MINNEAPOLIS 4, MINNESOTA

93 "ORIGINAL IDEA" JIG SAW PATTERNS

TIRED OF OLD IDEAS?—Here's welcome news. 93 ORIGINAL, professionally drawn and clearly printed patterns. Full size—up to 21" high. Shelves, toys, wall plaques, novelties, lawn ornaments, etc. Instructions for construction and finishing included. Send only $1.00.

WALKER STUDIO, MI-4
4363 Lindell Blvd. St. Louis 8, Mo.

GROW MINIATURE TREES

Grow authentic, LIVE dwarf trees! Fascinating hobby! Fabulous profit!

SEND FOR FREE SEED & INSTRUCTIONS!

MINIATURE NURSERY CLUB
Dept. 10-H, Box 18898, Rimpau Sta.
Los Angeles 19, California

FALSE TEETH That Loosen Need Not Embarrass

Many wearers of false teeth have suffered real embarrassment because their plate dropped, slipped or wobbled at just the wrong time. Do not live in fear of this happening to you. Just sprinkle a little FASTEETH, the **alkaline** (non-acid) powder, on your plates. Holds false teeth more firmly, so they feel more comfortable. Does not sour. Checks "plate odor" (denture breath). Get FASTEETH at any drug store.

Tells How You Can Learn to MOUNT BIRDS!

FREE BOOK

Learn At Home

Men, Boys, Hunters, Fishermen, **mount** and **save** your lovely wild-game **trophies. Be a Taxidermist.** Mount **Birds, Animals, Heads, Fish, Tan skins. YOU** learn easily, quickly in **spare time.** Have a grand **home-museum.** The finest and the greatest **hobby known,** for sportsmen. **Fun, real profits.**

FREE BOOK Yes, **FREE,** Beautiful **strange,** valuable **Book,** telling **all** about **Taxidermy.** Contains over **100** beautiful game-pictures. And it's yours **FREE,** if you rush your request. You can mount **all kinds of wild-game,** and common specimens too. We can positively **TEACH YOU.** So **GRASP** this opportunity. **RUSH** letter or postal for this amazing **FREE BOOK.** Don't delay. State your **AGE.**

N. W. SCHOOL OF TAXIDERMY, 2404 Elwood Bldg., Omaha 2, Neb.

Get into Good Paying AUTO BODY and FENDER WORK

BIG DEMAND in Auto Body and Fender work. Start training now in your spare time at home for good pay work. Practical shop experience included. U.E.I. Training covers metal work, welding, painting, etc. Placement service—or we will show you how to start your own shop. Behind U.E.I. TRAINING is a large national organization founded 1927. Write today for FREE FACTS—No obligation.

Write For Free Facts

AUTO-CRAFTS DIVISION • **UTILITIES ENGINEERING INSTITUTE**
2523 SHEFFIELD AVE., DEPT. XJ-22, CHICAGO 14, ILLINOIS

TASOPE PHOTO-ENGRAVING PLANTS

MATERIAL COST OF THIS CUT 1/2c SELLING PRICE $1.00 AND UP

Establish your own profitable PHOTO-ENGRAVING business. Make cuts for newspapers, printers, and advertisers. Make etched name plates, plaques, etc. Instructions furnished, no experience necessary. Sold direct from factory since 1931. First five hundred cuts sold locally or by mail will pay for plant and pay you well for your time. Write for FREE catalog.

TASOPE, DEPT. MI-4 AURORA, MO.

Holt's DOES THE JOB FOR YOU!

Piston Seal CYLINDER COMPOUND

CAR BURN OIL?

Nothing's as good as a complete engine overhaul — but Holt's genuine Piston Seal cylinder compound does restore power and compression —does cut oil consumption—up to 10,000 miles! Only Holt's has been tested and proved throughout the world more than 15 years. Your car needs it! Only $4.95. Canada $5.95.

MUFFLER TROUBLE?

No muffler is installed right, no muffler is repaired right, unless the job is done with Holt's "Gun Gum" Muffler Seal. Use straight from the can, no mixing. $1.69 per can. Canada $2.00.

HOLT'S Gun Gum MUFFLER SEAL

ONLY HOLT'S **LOY** Metal Mender

IS REAL METAL IN-A-TUBE!

Holt's Loy repairs everything from auto body dents to loose tool handles! Rustproof, flameproof, waterproof, holds 150 lbs. pressure! Handles like putty — sets harder than lead in metal, plaster, wood —even on aluminum! Loy is new—nothing else is "like" it. Only $1.00 for large tube. Canada $1.25.

If your dealer cannot supply Holt products, send to:

TREGLOWN CO., INC., FANWOOD 47, N. J.

CANADA: Treglown, Ltd., 1366 Greene Ave., Montreal 6

I MADE $14 PER DAY While still learning!

T. E. H.—WEST VIRGINIA

I MADE $800 IN 3 MONTHS While taking your course!

F. V.—NEW YORK

Get into the ELECTRIC APPLIANCE REPAIR & SERVICE BUSINESS

OPEN YOUR OWN SHOP As soon as you enroll, I send you my New Book "How to Open Your Own Business" at no extra cost. PTS training is more than a home study course in electric appliance repair and service. It gives you the "know how" on the operation of your shop from a business standpoint: What to charge, how to get customers. Everything possible is done to start you on the road to success.

SPARE OR FULL TIME
You can actually increase your income while still learning—spare or full time

ACT NOW
Want a good-paying business—a job in a fast-growing industry? Send now for your BIG FREE BOOK—"My Plan for your Success." Get started NOW

EASY TO LEARN
Men of all ages, yes, even the man of 69 can get into this expanding field. A REAL OPPORTUNITY for the practical man who wants the BETTER THINGS IN LIFE. The easy PTS Home Study Plan prepares you for greater earnings NOW!

I SEND YOU A BIG KIT of TOOLS at No Extra Cost

WE TEACH YOU: Electric motors, house wiring, refrigerator, auto ignition, automatic washers, garbage disposals, fluorescent lights, irons, cleaners, etc., at home.

FULL OR SPARE TIME

SEND FOR THIS FREE BOOK

MAIL THIS COUPON TODAY

PACIFIC TRAINING SCHOOL H. T. ARMSTRONG
7219 So. Broadway, Dept. M-534, Los Angeles 3, Calif.
Please send me, without obligation, your free booklet and details.

Name _____
Address _____
City _____ Zone ____ State ____

own your own business! earn up to

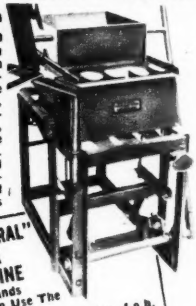
$75 A DAY CLEAR PROFIT

in your back yard or basement!

MAKE CONCRETE BLOCKS With Amazing New LOW PRICED GENERAL BLOCK MACHINE

NOW! Big Building Boom Profits Within Your Reach

You don't need much cash to cash in on the building boom! New high speed, low cost General Block Machine produces up to 1,000 concrete blocks a day for homes, factories, buildings, garages. Your profit mark-up is 100% to 150%! Fool-proof, easily operated, sturdy steel machine can make any size from 4" to 12". These superior 3-core blocks meet all building code requirements for foundation, chimney, corner, sash and many other types of blocks. Works indoors or out. Sand, cement and water available anywhere! Simple operating instructions and mixing formulae for cement and cinder blocks supplied FREE. Get full details, no obligation!



"GENERAL" BLOCK MACHINE

Thousands Now In Use The World Over! Only $218 less motor f.o.b. plant. Ship. wt. 400 lbs.

PAY AS YOU EARN!

small down payment

MONTHLY PAYMENTS as low as 28.33

Write Now for FREE Details

EXTRA!

Amazing illustrated book gives floor plans for 6 sensational concrete block bungalows. Tells how to lay blocks, lay out building lines, mix concrete, build steps, porch and concrete floors all at great savings. Written by experts. Can save many times the cost of the machine! Get it now! No strings attached.

HOW TO BUILD YOUR OWN CONCRETE BLOCK HOME

SEND $1 — Refunded if you buy machine!

GENERAL ENGINES COMPANY

Dept. I-43, 307 HUNTER STREET, GLOUCESTER, N. J.

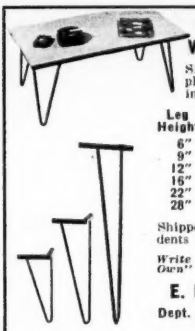
ONLY $32.50 LESS MOTOR

Favorite of home owners and craftsmen for 20 years! SPEEDY SPRAYER gives your work that professional paint finish everyone admires. Sprays paint, enamel, varnish, lacquer, etc. . . . 4 to 7 times faster than hand brushing! Lightweight, portable, uses any ¼ H.P. motor. Improved diaphragm principle assures clean, oil-free air. You'll find dozens of time and money saving uses for SPEEDY SPRAYER, including spraying insecticides 2-4-D and DDT. Complete outfit, without motor, only $32.50.

At leading hardware, lumber, and auto supply dealers. FREE—*write for handy booklet "How to Spray."*

W. R. BROWN CORPORATION

2659 N. Normandy Ave. • Chicago 35, Ill.



Design and Build Your Own WROUGHT IRON FURNITURE

Simply fasten legs with screwdriver to plywood, flush doors, etc. Screws are included. Finished dull black.

Leg Height	Attach Under	Diam. Iron	Price Set of 4
6"	sofa, couch	½" rd.	$ 6.95
9"	bureau	⅜" rd.	5.75
12"	coffee tbl.	⅜" rd.	5.95
16"	cocktail tbl., bench	⅜" rd.	6.95
22"	lamp, end tbl.	⅜" rd.	8.95
28"	dining tbl., desk	½" rd.	13.45

Shipped prepaid. No C.O.D.'s. Calif. residents please add sales tax.

Write for free catalog of other "Build Your Own" furniture.

E. F. LAWRENCE IRON WORKS

Dept. M1-4 2911 Whittier Boulevard Los Angeles 23, California

PORTABLE GARAGE

$6.95 ***Plastic Vinyl*** **USE IT ANYWHERE**

• Folds compactly • Keeps rain, snow, dust, salt air, sun or sleet away • Protects finish • Constructed of vinyl plastic • Fits all makes • Enclose check or money order for $6.95, or sent C.O.D. 10-Day Money Back Guar.

MARDO SALES CORP.

480 Lexington Ave. Dept. G-357 New York 17, N. Y.

BIG MONEY and your OWN BUSINESS in AUTOMATIC MERCHANDISING

Get started in the fabulous young business—automatic merchandising. Learn how small operators share in BILLION DOLLARS spent yearly in pennies, nickels, dimes for vended products. STUDY AT HOME so you can operate your own machines vending coffee, candy, sandwiches, other products. Write for amazing Reader's Digest reprint, "Insert Coin Here," the story of vending, SENT ABSOLUTELY FREE. Also how you can master secrets of selling merchandise automatically. RUSH NAME AND ADDRESS ON POSTCARD TODAY.

FREE — The STORY of VENDING

SUPERMATIC REPORTS, 1209 Calhoun, Dept. 34, Houston 3, Texas

Secrets of* VENTRILOQUISM *Now Revealed!

Easy to learn in 60 to 90 days with our Home Study Course. **RESULTS GUARANTEED.** Make Money! Be Popular! Have Fun! Big Opportunity! Radio, Television, Stage Appearances! For Free Information regarding price and terms, WRITE. You must state your age. Dummy Catalog 25c.

FRED MAHER SCHOOL OF VENTRILOQUISM
Box 36, Studio MI-4, Kensington Station
Detroit 24, Michigan

$2.95 EACH OR 2 FOR $5.00!

Upright Telephone complete with cord in Tested and Guaranteed condition. For Inter-communication or extension. Complete list of telephone parts, inter-communication sets, switchboards, handsets, magneto and dial telephones, etc. Write for list. F. O. B. Simpson, Pa. C. O. D. Shipments accepted.

TELEPHONE ENGINEERING CO.

Dept. 4. SIMPSON, PA.

TREASURE! URANIUM!

GEIGER COUNTERS—METAL DETECTORS
GEIGER COUNTERS for Uranium. METAL DETECTORS for gold, silver and buried treasure. 5 models from which to choose. We have one in your price range. No finer instruments available anywhere. FREE ILLUSTRATED FOLDERS.

THE Detectron CO. Model DG-7

5631 CAHUENGA, NO. HOLLYWOOD, CALIF.

$14.75 NO TAX TO ADD

Postpaid Complete Price
Federal Tax included

Look at These features

- ★ New 17 Jewel incabloc Swiss movement Anti-Magnetic
- ★ Shock Resistant
- ★ Water Resistant
- ★ Sweep Second Hand
- ★ Unbreakable Crystal
- ★ Radium Figures & hands
- ★ Chrome Case with steel screw on back

FREE *Matching Stainless Steel Stretch Band*

To give this unheard of low price check or money order must accompany order

10 day money back guarantee. You must be satisfied
One Year written guarantee
Send NOW $14.75 Will send postpaid

O. L. THOMPSON
Box 184, Dept. MI
Pocomoke, Maryland

FREE! SEND FOR MY NEW PLAN FOR A BUSINESS OF YOUR OWN!

METALIZE BABY SHOES

Add to your present income or have a full-time business. Fill huge demand for most precious keepsakes. Start at once—no big investment. Complete instructions include *all* processing methods. It's fun and very profitable. Start now – SEND NO MONEY – just name and address.
KIKTAVI CO., Dept. M-534, 7217 S. Broadway, Los Angeles 3, Cal.

•Instructions Include Complete Kit of Supplies & Beautiful BRONZED BABY SHOE

FREE BIG SALES KIT
Make up to $30.00 a day - Full Time or Part Time

Build a permanent "repeat" business of your own without one penny of investment! Sell John Neil Air-Cushion Shoes Direct from famous New England factory. Firestone Foamex cushions—complete line of men's dress, work, safety shoes! Women's and children's shoes. Fast deliveries from our mammoth stock department.

JOHN NEIL SHOE CO.
Dept. 522 Brockton 64, Mass.

LOW OVERHEAD—LARGE VOLUME SALES & SMALL PROFITS BRING YOU THESE *LOWEST PRICES*
What good is a tire without a tube? Tube given with every tire.
TUBE GIVEN WITH EVERY TIRE AT NO EXTRA COST

Why Pay More!

SPRING SPECIALS — AT LOW PRICES
SAVE TIME — SAVE MONEY — SEND THIS AD

GOOD USED TIRES "Not recapped."

19 YEARS AT THIS ADDRESS
Be Wise— A TRIAL OF ONE TIRE WILL CONVINCE YOU.

15 MONTHS WRITTEN GUARANTEE

600x16	$4.06	820x15	$5.36	600x20	$8.06	32x6(8)	$ 9.96
650x16	4.46	700x15	4.36	650x20	9.06	32x6(10)	10.06
700x16	5.06	670x15	4.36	700x20	10.06	900x20	16.96
650x15	4.66	710x15	4.76	750x20	12.06	1000x20	17.06
760x15	5.06	550x17	4.56	825x20	16.96	1100x20	19.96

EXTRA SPECIAL 30 MONTHS WRITTEN GUARANTEE

600x18	$4.76	550x15	$ 5.06	700x15(8)	$ 9.66	700x20	$10.96
600x16(6)	5.76	640x15	4.96	750x16(8)	9.66	750x20(8)	12.66
650x16	5.16	670x15	5.66	700x17	10.06	750x20(10)	16.06
650x16(6)	6.16	710x15	5.66	750x17	11.06	825x20	18.16
700x16	6.06	760x15	6.46	750x15	12.06	900x20	17.26
750x16(6)	6.96	800x15	6.46	825x15	10.06	1000x20	17.86
550x18	5.16	820x15	6.46	600x20	8.86	1100x20	20.06
550x17	4.96	670x16	5.66	32x6(8)	10.36	1200x20	30.06
650x15	4.76	760x16	6.46	32x6(10)	10.86	1000x22	20.06
700x15	4.76	650x20	10.16	475x19	4.76	1100x22	19.76

Whitewalls ..... $1.00 Extra | Military truck tires 750x20 ... 14.06

Thousands of tires shipped all over U.S.A. All tires shipped F.O.B. Phila. Send Check or M.O. with this ad. Dept. 6.

STANDARD 834 N. Broad St., Philadelphia 30, Pa.

Hear What You're Missing

Get a hallicrafters

Enjoy the thrills of short-wave at down to earth prices. Now, for no more than you'd expect to pay for an ordinary radio, you hear regular broadcasts plus London, Paris, Moscow – ships at sea, aircraft and police calls – amateur broadcasts, emergency frequencies – and much more.

These are radios made by Hallicrafters, for years the leading manufacturer of precision communications equipment for the armed services, and for years the favorite of America's ham operators. Write for FREE information on the Hallicrafters line of outstanding receivers and transmitters.

HALLICRAFTERS MODEL S-53A—Only $89.95

hallicrafters

World's Leading Manufacturer of Precision Radio Communications Equipment for the Armed Forces

Hallicrafters, Dept. MI-43, 4401 W. Fifth Avenue
Chicago 24, Illinois
Please send me complete information on Hallicrafters Short Wave.

Name.....
Address.....
City..... State.....

FREE TO NEW MEMBERS...

IMPORTS

FROM FOREIGN LANDS

NOW! EASY TO START YOUR OWN BIG-PROFIT IMPORT-EXPORT BUSINESS AT HOME!

FREE to new members of the International Traders Guild—many unusual, useful products from France, India, Germany and other foreign lands, and trade bulletins listing hundreds of import bargains. World trade boom offers new, big-money opportunities for men and women! Now you can import at low foreign prices for buyers in your locality at high U. S. prices.

BUY-SELL WORLD WIDE, WITHOUT CAPITAL

Big profits possible, no investment in goods. Operate a world-wide mail-order business from home, spare or full time. Also, for your own use, big savings on clothes, tools, gems, antiques, watches, cameras, china, silk, toys, etc. (see examples at left). No matter where you live World Trade can be carried on – in small towns or large cities, anywhere. World travel opportunities. Established World Trader shows you how. Teaches you quickly at home.

START AT ONCE - IMPORT PROFITABLE ITEMS

Complete training includes many exciting imports that come to you from 'round the world AT NO EXTRA COST. Go after big profits NOW–importing and exporting. No previous experience is required. 2000 members in 42 countries. 7th successful year. Free details, write Now. Airmail reaches us overnight.

"We operate a profitable WORLD TRADE BUSINESS FROM OUR HOME...Thanks to Mellinger"
Mr. and Mrs. H. F. BEKE, N.Y.

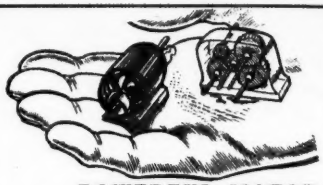
The MELLINGER CO., Exporters-Importers,
Suite 264, 1717 Westwood Blvd., Los Angeles 24, Calif.

Nova Roller Doors

for passageway or storage space

INSTALLED IN JUST 30 MINUTES

Be modern — with handsome, silent, space-saving roller doors. Exclusive Nova construction features give you doors operating under fingertip control —built for year 'round use in any climate—light, strong, warp-resistant. Two or more doors enclose any opening. Each door comes complete in one carton and is quickly installed by one man... These are hollow core, flush doors — regularly sold in the finest plywood or lumber—from birch and gum to imported mahogany, for any waxed, stained or painted finish your interior design may demand. Write today for fully illustrated literature. Department 51C, NOVA SALES CO., Trenton 3, N. J.



COMPLETE MOTOR & GEAR KIT HOUSING BATTERIES CLIPS only $2.98

POWERFUL MOTOR:

One of the smallest precision motors ever built yet does GIANT-SIZED JOBS. Drives Model Planes, Boats, Construction Sets, Working Models, Trains, and Cars, etc., with amazing speed up to 6800 R.P.M. (or as little as 50 R.P.M.) using the reduction gears that come with this exciting set. This MIGHTY-MIDGET does hundreds of jobs. It's a Honey! Looks exactly like a Big Motor yet measures 1"x1¼" and weighs one ounce. For only $2.98 YOU GET LOTS MORE with this Mighty Midget. You get a complete set of gears and pulleys and a multi-ratio gear box as well as a battery clip with two batteries and instructions. NO SHOCKS, SPARKS OR SHORTS. NO TRANSFORMER NEEDED. Reverses immediately too! Endless hours of fun. Enclose check or money order for $2.98 for this entire set and we will pay postage. C.O.D. orders plus postage.

IMPERIAL SALES CO.
480 Lexington Ave., Dept. M-609, N. Y. 17, N. Y.

CARS Magazine

Second issue on newsstands. First a sellout so get your May copy NOW!

MASTERCRAFT DRAFT STOPPER

IT'S NEW, IT'S DIFFERENT, IT'S ECONOMICAL PROTECTION "MAKES ANY DOOR A PERFECT FIT"

Rubber sweep securely set in heavy aluminum channel. Stops drafts and insects from entering. Covers unsightly gaps at door bottoms, adjustable to different heights, adaptable to wood or aluminum doors.

Your choice of extruded lengths 30"-33"-36"-38". Send today—Satisfaction guaranteed or money back—$1.80 per pr. $1.00 Each Postpaid

MASTERCRAFT EQUIPMENT, 15 BODEN AVE., VALLEY STREAM N. Y.

Broken or Loose FALSE PLATE?

Make Plates Like New

Fix it Yourself EASILY in a Few Minutes

Your plates may become broken or loose just when you need them most. With FIX-IT-KIT you can repair your own broken plates. Also tightens loose fitting plates, easily. Get permanent comfort with professional material. Complete instructions. Satisfaction guaranteed or your money refunded. *Order Now* at a new low price only **$2.98** postpaid — or sent C.O.D.

DENT-FIX DENTAL PRODUCTS, Dept. MI-4
P.O. Box 674 Kansas City 8, Missouri

OVER A MILLION PATTERNS
WE MATCH
PANTS • COATS • SLACKS • SKIRTS

MATCH PANTS

★ TAILOR MADE ★
SEND US SWATCH OR ARTICLE
ACE MATCH PANTS COMPANY
222 Y W. VAN BUREN ST. • CHICAGO

Imported BRITISH ORDNANCE Hunting KNIFE and Sheath!

$3.95 each postpaid

Brand new. From big game hunters in Africa, Alaska, Asia and Europe we have heard what a wonderful hunting knife this special British ordnance design makes. We have purchased the small remaining supply known to exist in the world. This is the actual knife of finest Sheffield steel with ribbed balanced contour handle made in England for the exclusive use of WW II British Commando units. It has proven to be ideal for skinning out game, also for handling big saltwater fish, muskies, etc. Excellent serviceman's gift. Shipped in original commando metal-tipped sheath for belt and boot. 12" overall. Send check, cash or M.O. Sorry, no COD. For U.S., A.P.O. or F.P.O. air mail add 80c per knife. Dealers inquire. Calif. resid. add 3% state tax.

Pasadena Firearms Co., Dept. H
972 EAST COLORADO STREET
PASADENA 1, CALIFORNIA

HAIRVAC

New Massage Instrument Keeps Hair, Scalp, Clean and Healthy

Removes embarrassing dirt and dandruff . . . promotes hair health with electrical massage. Vibrating rubber fingers loosen, vacuum suction removes, harmful scalp wastes. Soothing, enjoyable rotary massage—3000 pulsations per minute—tones up scalp, stimulates circulation, distributes vital natural oils, makes scalp tingle for hours. VISKON patented disposable filter—easily inserted and removed—traps dirt and dandruff . . . immediate visible proof of HairVac's effectiveness. USE HAIRVAC DAILY to keep hair handsome, glossy, better looking . . . scalp clean, healthy, invigorated.

Hand-size, easy to use, convenient at home or away. Wonderful with a wave; no resetting ever necessary. No water, soap, oil—nothing to dull the natural beauty of your hair. Already in use in thousands of homes. UL-approved. AC only. Complete with 100 filters, only $14.95, postpaid. Order by mail today—check, money order or C.O.D. Immediate delivery. Guaranteed, of course.

HUGH PAULK

304 Kansas Ave., Dept. 334, Topeka Kansas

Start Your OWN ELECTRICAL APPLIANCE REPAIR BUSINESS

Repair electrical appliances of friends and neighbors. Service electrical equipment in factories, stores, etc. Work full or part time! New Shop Method home-training system. Rush name today for **FREE BOOK** and special form for getting Electronic Kit. Valuable Heating Element Kits. Advisory Service and Illustrated Instructions on new easy-payment plan. Pay later from **EARNINGS WHILE LEARNING.** Rush name today.

CHRISTY TRADES SCHOOL

4432 N. Kedzie, Dept. D-1606, Chicago 25

Start as high as $3,795.00 a year!

Veterans Get Preference

Men—Women

Prepare NOW for next examinations

Mail Coupon today sure.

COUPON

FRANKLIN INSTITUTE, Dept. X-77, Rochester 4, N. Y.
(Not Govt. Controlled)

Sirs: Rush to me without charge (1) 32-page book with list of U. S. Government jobs, (2) Tell me immediately how to qualify for one of these jobs.

Name _____

Street _____

Address _____ Age ____

NEW

1953 BOAT KITS BY U-MAK-IT

30 Models 8 TO 23 FEET

New

21 FT. OUTBOARD AND INBOARD CABIN CRUISERS

Roomy cabin sleeps 2. Includes full size toilet room, galley, sink & ice chest.

New

18 FT. OUTBOARD AND INBOARD CABIN CRUISERS

Fast Vee bottom hull, speeds up to 25 M.P.H. Accommodations for 2.

ROWBOATS OUTBOARDS INBOARDS

8 to 14 Ft. 12 to 21 Ft. 16 to 23 Ft.

NEW 1953 CATALOG

44 PAGES, shows construction details. Incl. everything to build your own—hardware, engines, conversions, paint & color chart. Also Fiberglas covering for all Kit Boats, Cabin Roofs and Decks

SEND 35¢ COIN TODAY

U-MAK-IT PRODUCTS 703A - WHITTIER ST. Bronx 59, N. Y. City

STUDY AT HOME LAW FREE BOOK!

Prepare for the Bar!

Write today for a copy of our FREE book, **"The Law-Trained Man,"** which gives the bar rules in your state and tells how ambitious men and women since 1890 have been preparing at home in spare time for the practice of law by studying the famous Blackstone bar-training course. All needed instruction material is furnished including big 16-volume law library. Law diploma awarded. Moderate tuition; easy monthly terms. Write for FREE book today!

BLACKSTONE SCHOOL OF LAW

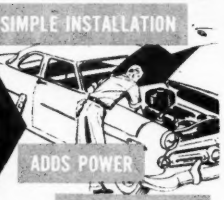
225 N. Michigan Ave., Dept. 64, Chicago 1, Illinois

Install a

Belond
EQUA-FLOW
EXHAUST SYSTEM

on your car!

NO SPECIAL TOOLS
SIMPLE INSTALLATION
ADDS POWER
SAVES GASOLINE
SPEEDS ACCELERATION



The Belond EQUA-FLOW Exhaust System is called America's number one improvement for V-8 cars. Low in cost, installed in a few hours with simple tools, remarkable in performance—it's something you should have, if you like maximum efficiency in the power plant of your car. Belond EQUA-FLOW Exhaust Systems practically eliminate back pressure, providing 10% to 12% more road horsepower, higher top speed, better mileage, less need for servicing or tune-ups. Take a tip from tens of thousands of "car perfectionists" who are Belond enthusiasts, and equip your V-8 with the dual Belond EQUA-FLOW Exhaust System. See your Belond dealer.

Write direct for free information.

SOUTHERN CALIFORNIA MUFFLER CO.
11039-49 Washington Blvd., Culver City 18, Calif.
TM REG. COPYRIGHT 1953

Get FREE Sample
Transveneer
PLASTIC VENEER

The amazing miracle finish anyone can apply to any smooth surface. Gives new beauty to old or unfinished furniture. Home craftsmen rave about it.

As reported in
POPULAR MECHANICS

Choose from 13 True-to-life Photographic Reproductions in Full Color of WOODS — MARBLES — LEATHER

So revolutionary that scores of National Magazines have run stories and full color pictures. A sensation with Home Craftsmen. Used for years to finish finest radio and television cabinets, furniture, and interiors of expensive cars. New, simplified method for applying makes home use easy. Covers any smooth surface whether flat or rounded. Turns corners, presses into shallow recesses and has relief. Can be varnished, waxed or polished like wood. Transform old tables, chests, cabinets into new modern pieces. No glue, no clamps, no weights. Goes on like decal. **ACTUAL SAMPLE FREE.** Send name, no money. We postpay actual sample, plus information, prices, and full color chart of wood, marble, and leather grains. Apply sample. See for yourself how easy, how beautiful, how true to life. Send name at once. A postcard will do.

"Junk" into Beauty
Old dining table—cut down—covered with Verdi Antique Marble Transveneer—becomes modern coffee table. Big circular of projects sent with Free Sample. Send name, no money. We prepay postage.

Transveneer Sales Co., 125 W. Hubbard St., Dept. TV-44, Chicago 10, Ill.

SAVE 75% ON

WORK CLOTHES!
SURPLUS STOCK FROM MIDWEST SUPPLY FIRM!
Terrific values you've got to see to believe!

SHIRTS 89c
Made to sell for 2.99! Now Only 4 for $3.45

What a buy! 4 for the price of one! These shirts, though used, are washed, sterilized and ready for long, tough wear. Assorted colors. *Send name, address, neck size.*

PANTS *to match* **99c**
Sold for 3.95 now only . . . . . 4 for $3.85
Unbelievable Bargains! *Send waist measure and inside leg length.*

COVERALLS . . . wear 'em used and save plenty! Originally 5.95. Now only . **$1.95**
Send chest measurement. 3 for $5.75

SATISFACTION GUARANTEED! Money back if you're not convinced these are bargains you can't beat! You can't lose so order TODAY for immediate delivery! Pay postman or send money with your order and save postage.

GALCO SALES CO. Dept. 304
4064 East 71st Street • Cleveland 5, Ohio

BECOME AN EXPERT IN
TRAFFIC

Traffic men earn $4,000 to $10,000 and up. Thousands of firms need experts on rates, tariffs, regulations. We train you thoroly in spare time at home for executive traffic jobs. Personal training under traffic authorities. Placement counsel and help. Write for free 48-page book "Traffic Management—the Fast Growing Profession."

LASALLE Extension University, 417 So. Dearborn St.
A Correspondence Institution Dept. 4493-T Chicago 5, Ill.

LEARN TO **METALIZE** BABY SHOES

AMAZING NEW KIT METALIZES BABY SHOES AND KEEPSAKES WITHOUT EXPENSIVE EQUIPMENT. NO EXPERIENCE NEEDED. WE FURNISH EVERYTHING, 4 LBS. OF EQUIPMENT WITH INSTRUCTION BOOK. SEND FOR YOUR FREE INFORMATION NOW AND LEARN ABOUT THIS PROFITABLE NEW PLAN!

THE MEDCO CO.
BOX 444-A, CULVER CITY, CALIF.

FREE SAMPLE LESSON
WATCHMAKING

CHICAGO SCHOOL, Dept. 643
2330 Milwaukee Avenue, Chicago, Illinois

Show me without obligation how I can learn watch repairing at home. Rush free sample.

Name .....
Address .....
City ..... Z..... State.....

PAINT SPRAYER

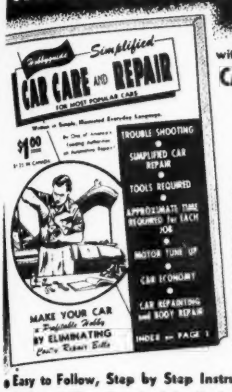
Powerful Professional Type:

Use on any hard to brush surface . . . Chairs, wicker furniture, screens, autos, boats. MOTHPROOF clothes, rugs, drapes, storage closets, etc. • Just plug in and spray . . . glossy paints, enamel, varnish, lacquers, stain, oils, disinfectants, insecticides, mothproofers, etc. • A lifelong useful tool.

9.95 Complete
Enclose payment or sent C.O.D.

IMPERIAL SALES CO., Dept. S-610
480 Lexington Ave., New York 17, N. Y.

SAVE UP TO 90% ON CAR REPAIRS



with this COMPLETE VOLUME on

CAR CARE and REPAIR

Written by One of America's Leading Authorities on Automotive Repair in Simple Everyday Language.

The ONLY manual ever published that TELLS YOU AT A GLANCE in SIMPLE EVERYDAY LANGUAGE how to do 90% OF YOUR OWN CAR REPAIRS, giving the APPROXIMATE TIME and the NECESSARY TOOLS REQUIRED for each and every job! Think of it! Save up to $9 out of every $10 you spend on car repairs by doing the job yourself.

- Easy to Follow, Step by Step Instructions
- Tools and Time Required for Each Job
- All Repairs that You Can do Yourself
- Instructions for Most Popular Cars

$1.00 Postpaid
$1.25 in Canada

Complete, factual, authoritative! Do not confuse this manual with those written in technical language that go into theory and lengthy unnecessary details understood only by mechanics. Make your car repair your hobby. Only $1 postpaid. Don't wait. Send in today!

SATISFACTION GUARANTEED or MONEY BACK

Send Cash, Check or Money Order

ORDER FROM *Hobbyguide* DIVISION OF Apollo Ad Service, Inc. P. O. BOX 1362 YORK, PENNA.

DRAINS Cellars, Laundry Tubs; CIRCULATES Oil; IRRIGATES Gardens

Original "Type P" Pump has 2400 GPH capacity. 360 GPH 75' high, or 1500 GPH for 25' well. Use any ⅛ to ½ HP motor. DOES NOT CLOG. 1" intake; ¾" outlet

Only $6.95 postpaid if cash with order.
MOTOR COUPLING INCLUDED
(West of Mississippi, add 50c.)

SATISFACTION GUARANTEED OR MONEY BACK!
Also Gear Pumps in all sizes.

$6.95

LABAWCO PUMPS, BELLE MEAD 30, N. J.

NOW LEARN TV-RADIO Servicing AT HOME!

EARN WHILE YOU LEARN! No previous training needed. New, simplified lessons with complete parts kits. Build your own TV set! A leading school, approved for Korean vets. Also Residential Course (day & eve. classes). Send for FREE sample lessons and full details on a profitable, thrilling career. Write Dept. C4.

CRESCENT SCHOOL
500 PACIFIC ST. • BROOKLYN 17, N. Y.

ONE THOUSAND GOLDEN OPPORTUNITIES

MOST GENEROUS OFFER!

We offer men and women everywhere what we believe is the greatest and most generous offer ever made to ambitious people in the U.S.A.! It's like receiving an inheritance or being remembered in your rich Uncle's will! We show you how to make an endless variety of beautiful things. We supply all the materials and instructions and show you how to dispose of your products at tremendous profits! It's a fascinating business and simple to operate. NO TOOLS OR MACHINERY REQUIRED! The casting process is as easy as pouring water out of a glass! Work at home or in your garage!

FASCINATING BUSINESS OR HOBBY!

Make extremely beautiful imbedded jewelry, bookends, figurines, planters, ceramics, statues, ash trays, lighters, banks, lamps, exquisite gems, fishing lures, keychains, novelties, curios, gadgets, souvenirs, pensets and an unlimited variety of useful and wonderful products! This work is so pleasant and fascinating that many take it up as a grand and profitable hobby!

UNLIMITED POSSIBILITIES!

The ONLY limitation is your imagination. No special talent, no previous experience, no special tools or machinery required! We will supply you with raw materials or finished products, start you in business and GUARANTEE your sales, or money refunded!

HOW TO START

We can't hand you cash . . . but we offer you something that ordinarily takes thousands of dollars and many years to establish; yet it's all yours for the asking! We urge you to investigate this unusual offer today. You'll be excited and thrilled over the many wonderful opportunities we hand you ABSOLUTELY FREE! Send only 25c for our big 56 page Catalog describing the fascinating process of creating and manufacturing mentioned above. Do it today . . . don't delay anything that could be so important to your future!

PLASTICAST CO. (Dept. H)

P. O. Box 6737, Chicago 80, Ill. — (*Write to nearest address*) — P. O. Box 987, Palo Alto, Calif.

RED HOT ELECTRIFYING BARGAIN!

THYRATRON REMOTE CONTROL

SERVICEMEN—HOBBYISTS—HAMS—EXPERIMENTERS—RADIO SCHOOLS

You get the complete set including cabinet and wiring diagram for only

2.98 Delivered FREE to your door! No COD's please!

Can easily and quickly be modified for Electronic Remote Control of: Transmitters; Turn Radio and TV on and off; Open and Close garage Doors from your car; etc. Schematic Diagram included at No Extra Cost.

Here's the chance of a lifetime to own a genuine Thyratron Electronic Remote Control of your own at a fraction of its regular price! This mighty handful (only 5¾x5x3¼) of miracle control can be made to perform hundreds of practical, fascinating feats of remote control. A complete schematic showing the circuit is included with each unit.

IT'S A STEAL! Buy it just for the parts alone. Take it apart! Look what you get: Valuable parts galore that you can so easily use in any other radio, amplifier, etc.—or for experimenting.

The New Wonder Unit Yours For Practically Nothing

HOW CAN YOU LOSE? These parts are certainly worth THREE TIMES this amazing low cost. The extra sensitive Plate Trigger Relay costs more than what we're asking for the entire set. Besides, consider the Filament Transformer, condensers, resistors (many of them 1% precision). No matter how you use it, here's a red hot Bargain. Operates on 115 V AC.

MANUEL KLEIN CO., 94 Chambers St., New York 7, N. Y., REctor 2-6460

LOOK AT ALL THE PARTS YOU GET

- .16 Mfd @ 150 Volts
- .1 Mfd @ 200 Volts
- .02 Mfd @ 200 Volts
- .25 Mfd @ 600 Volts
- .25 Mfd @ 600 Volts
- .125 Ohm Variable Control
- .600 Ohm Calibration Control
- .1 Megohm—½ Watt
- .3 K-ohm—1 Watt Wirewound
- .925 Ohm—1 Watt Wirewound
- .8 K-ohm—10 Watt Wirewound
- .2600 Ohm—1 Watt Wirewound
- .75 K-ohm—½ Watt
- .1 Megohm—½ Watt Carbon
- .150 K-ohm—½ Watt
- .1 Megohm—½ Watt Carbon
- .47 K-ohm—½ Watt Carbon
- .2 Megohm—½ Watt Carbon
- .1 Megohm—½ Watt Carbon
- .1 Megohm—½ Watt Carbon
- .24 Ohm—2 Watt Wirewound
- Filament Transformer
- Control Relay
- Switch—SPST
- Pilot Lamp, Type 44
- Neon Bulb—NE-2
- Control Housing
- Bottom Plate
- Escutcheon

I'LL GIVE YOU... THESE AUTO SEAT COVERS AS A BONUS!

And pay you well besides if you will show them and take orders from car owners in spare time only!

Just 1 sale a day can pay you up to $16.50 daily in profits!

It's no trick at all to make extra money day after day when you can offer car owners America's greatest seat cover values . . . and a choice of patterns, styles and materials that will fit their car such as no one else in your territory could possibly offer! Free Sample Outfit that fits into your pocket . . . complete with swatches of the gorgeous new materials . . . will start you taking orders at once. No one can compete with you in wide choice, in quality—and in expert tailoring that makes covers fit like a pair of gloves. And when you quote the low direct prices that are only a fraction of what the customer expects to pay you'll find you can make money hand over fist writing up the fast orders! Line includes nationally advertised sensations like BLACK EBONY Saran, in the new Black and Silver Watermelon Stripe, beautiful beyond description BAMBOO, luxurious, brilliant FIESTA, colorful BULLFIGHTER PLAIDS, plus many other exclusive patterns to choose from, all at unbelievably low prices. It's no trick at all to make big money, whether you sell full time or just in spare time. OPPORTUNITY TO SELL AT WHOLESALE TO GARAGES, SERVICE STATIONS, ETC.

$45.00 SET OF COVERS For Own Use GIVEN AS BONUS

GIVE MAKE, YEAR AND MODEL OF YOUR CAR. No experience needed.

Make all the extra money you need easily just by showing! Every car owner a "hot" prospect. YEAR AROUND STEADY PROFITS. No investment to make. Actual seat covers given to producers for OWN use! Write for Free Selling Kit and actual samples TODAY!

KEY PRODUCTS CORP.
800 NORTH CLARK STREET, Dept. 29-D, CHICAGO 10, ILLINOIS

RUSH NAME FOR FREE OUTFIT!

KEY PRODUCTS CORP., Dept. 29-D
800 N. Clark St., Chicago 10, Ill.

Rush Free Sample Outfit at once. (If you own a car include the following information):

Make..... *Year*..... *Model*.....

Name .....

Address .....

City ..... Zone.... State.....

Classified Ads

Your advertisement can reach this mail-buying audience of multi-million readers for only 80c per word . . . payable in advance . . . minimum 10 words. Copy to be inserted in June issue must be in the office April 3. Mail to MECHANIX ILLUSTRATED, 67 West 44th Street, New York 36, N. Y. Word count: Zone number free. Figure one word: Name of state (New Jersey); name of city (New York); sets of characters as in key (14-D); also abbreviations as 35MM, 8x10, D.C., A.C.

SAVE MONEY • ORDER BY MAIL

• • • ADVERTISING SERVICE & AGENCIES

ADVERTISE: 24 WORDS, 100 Canadian Newspapers, $5.50. Lists Free. Advertising Bureau, 10511-B Springfield, Chicago 43.

$10,800 PROFITS! YOUR Own Mailorder Business! No capital risk! "Success Plan" (worth $2) free! Write today! Treasury, 149 Storer, New Rochelle 16-X, N. Y.

• • • AGENTS WANTED

PHOTO-SALESMEN-AGENTS. Sell beautiful hand colored plastic enlargements and sensational new photo compacts, rings, bracelets, lockets, etc. Collect deposit, we deliver. Profitable sideline. Send card, for Free sample kit. Novel Portrait Co., 3343-B North Ave., Chicago, Ill.

EXCELLENT SIDELINE for printing and advertising salesmen. Decalcomania name plates in small quantities. Great demand. Also, make money with our line of Automobile Initials and Sign Letters. Free Samples. "Ralco." XL-Roxbury, Boston 19, Mass.

WHERE TO Buy 800,000 articles direct from Manufacturers. Save by buying direct. Sent Free. "Your Profits Under the Spotlight." Glass Pub. Co., Ellwood City 7, Penna.

BUY WHOLESALE—25,000 items—Catalogue 25c. Matthews, 1472-D7 Broadway, N. Y. C. 36.

BARGAINS—TERRIFIC Savings—Job Lots —Close-outs! Also save up to 50% on drygoods, clothing, hosiery, notions, drugs, toiletries, gifts, jewelry, television, etc. 2000 items. Send 25c for wholesale bargain catalog with special "get acquainted" offer which includes free $1.00 merchandise certificate. Reliable Jobbers, 311-C North Desplaines, Chicago 6.

BE A Money Maker . . . Use your home as magazine headquarters. Liberal commissions. No experience—No capital needed. Everything furnished. Write for Free Catalog. McGregor Magazine Agency, Dept. 520A, Mount Morris, Ill.

BIG PROFITS Selling Ties. ($2.00 values), $6.50 dozen. Free catalog. Empire Cravats, 648B Broadway, New York 12.

FREE BOOKLET reveals amazing secrets behind 301 unique, profitable enterprises! Start sparetime! Home! Deumant Publications, 81-G Deumant, Kenmore 23, N. Y.

NEW PLASTIC Mending Tape. Just press on! Repairs clothing instantly. Lightning seller. Samples sent on trial. Kristee 159, Akron, Ohio.

MAKE $15.00 DAY selling our large illustrated old money guarantee buying 25c catalogue. 100 postpaid $10.00. One dozen $1.50. Worthycoin Corporation (A105) Boston 8, Mass.

'53 WHOLESALE DEALER Kit on Appliances, Typewriters, Recorders, Cameras, Giftware, etc. Free, write Arrow Distributing, 154-D Nassau Street, N. Y.

MEXICAN FEATHER Pictures. Terrific profits! Adelphi, Box 57-J, Bellerose 26, N. Y.

AGENTS—SHOW America's leading Nationally Advertised line — Novelties, Gifts, Utility Items. 100% Profits. Prospects Everywhere. Steady Repeats. Write today for sensational low prices. Free Literature. Charms & Cain, 407-MI-43 South Dearborn, Chicago 5, Ill.

AT LAST! Something New and Sensational in Everyday Cards, 21 for $1. Make Extra Money Fast! Show Satin, Velour, Metallic Cards. Get orders easy. Big line $1 Assortments, Scented Stationery, Personal Matches, Kiddie Books. Imprints Free. Three $1 boxes On Approval. Puro Co., 2801 Locust, Dept. 364-D, St. Louis 3, Mo.

GOLD LACQUERED and silver sign letters. Windows, doors, trucks. Standard Sizes. Penny and up Samples. Atlas-M, 544 West 79th, Chicago 20.

CALIFORNIA PERFUME Beads. Sensational sellers. Particulars Free. Mission, 2328CF West Pico, Los Angeles 6, Calif.

$1 STARTS YOU In Business. Sell fine $1 ties. $1.50 and up values only $7.20 dozen, you make $4.80. Send only $1 for 2 sample ties. Catalog free. Philip's Neckwear, Dept. 128, 20 West 22nd Street, New York 10.

SELL FAST—79c Baby Necessity. Big repeater. Baby Gay, Beaver Dam 7, Wisc.

SELL BIG Money Maker to Men and Women. Easy handwork makes fast-selling useful articles. Sample free. Sunmade Company, Brockton 64, Mass.

BUY WHOLESALE from Manufacturers, Distributors. Over 500,000 Items. Literature free. Carter Publications, Box 6011-C, Chicago 80.

MAKE $50 OR More Fast with sensational greeting card line. Big value All-Occasion Box Assortments, Birthday, Easter, Secret Pal, Religious Cards. Wrappings, Stationery. Unusual Gifts and Gadgets. Amazing profits. Bonus. Experience unnecessary. Write now without risk for samples on approval and selling plans. Hedenkamp, 361 Broadway, Dept. MI-24, New York.

BUY NATIONALLY advertised appliances, cameras, watches, etc., direct from large Brooklyn wholesaler. Details free. Pette Co., 1554 W. 11 St., B'klyn. 4, N.Y.C.

BOOK "505 ODD, Successful Businesses" free. Work home! Expect "Odd"!! Pacific-21C, Oceanside, Calif.

BUY WHOLESALE thousands nationally advertised products at big discount. Free "Wholesale Plan." American Buyers, 629-G Linden, Buffalo, N. Y.

AMERICAN WOMAN Styling. Big Extra Money. Just show gorgeous dresses to friends, relatives. No investment or experience. Rush name, address, age, dress size. Melville Co., Dept. 7978, Cincinnati 25, Ohio.

ABSOLUTELY FREE—Sales Kit. Yours for the asking. Send postcard today requesting kit showing new line, belt buckles with your name or personal initials, cap badges, choice 3000 different emblems. Write Hook-Fast, Box 1425MI, Providence, R. I.

NEW EASY Way To Make Money! Show friends new ideas in All Occasion greeting cards, gift wrappings, home and gift items. Big profits. Experience unnecessary. Request Feature samples on approval and free samples exclusive Name Imprinted Stationery, Gold Imprinted items. New England Art Publishers, North Abington 812-C, Mass.

MAKE MONEY Introducing world's cutest children's dresses. Big selection adorable styles. Low prices. Complete display free. Rush name. Harford, Dept. J-5341, Cincinnati 25, Ohio.

ABSOLUTELY FREE, yours for the asking. Send postcard today requesting free sales kit showing complete new line, belt buckles with your name or personal initials, cap badges, 3000 different emblems also uniforms, caps, shirts, ties, wallets, etc. Write Hook-Fast Company, Box 480MI Roanoke, Va.

• • • SALESMEN WANTED

AD MATCHES! Sell Amazing Designs—20, 30, 40 and 240-light book matches. Bigger spot cash commissions; every business a prospect. Low prices for high quality. Repeats. Start without experience; men, women; full, part time. Buy Nothing! Sales kit furnished. Match Corp., Dept. MI-24, Chicago 32, Ill.

SALESMEN—PUT yourself in line for big money, real future. Keep stores supplied with self-selling 5c-$1 carded merchandise. Nationally advertised. Top profits for you and merchants. Liberal deals boost sales. Sideline or full time. World's Products, Dept. 14-Y, Spencer, Ind.

ADVERTISING BOOK Matches—Cash in on big demand; sell union label matches. Cuts for all businesses and political parties. Free powerhouse selling kit, low prices, protection guaranteed on repeat orders. Cash commissions. Superior Match Co., Dept. F-453, 7530 Greenwood, Chicago.

POSITIVELY MAKE $50.00 a day and up selling brand new item going to every type of Food and Beverage Store, Factories, Laboratories, Hospitals, etc. Samples Furnished. Utility Durawear, 53 West Jackson Blvd., Dept. MI-3, Chicago 4, Ill.

AMAZING DISCOVERY, Master Glaze, puts brilliant glass-like surface on cars. Free Sample, information. Big commissions. Master Glaze, Dept. 767, 7720 Harwood, Milwaukee, Wisc.

IS $210 A week worth a postcard to you? Then rush card with name and address for special Free Trial Plan that sells amazing new Automatic Refrigerator Defroster "like hot cakes!" Write to Mr. Lewis. D-Frost-O-Matic Corp., Dept. W-101, 173 W. Madison, Chicago 2, Ill.

NEW JOBS open in selling! Send name, address for five free issues of Opportunity Magazine's money-making guide, listing hundreds of companies who'll pay you well, full or part-time. No experience needed. Opportunity, 28 E. Jackson, Dept. 19, Chicago 4, Ill.

• • • BUSINESS OPPORTUNITIES

"FROG RAISING!" Season just starting! Get this year's eggs. New book tells how. Free folder. Broel-M., 1035 Marlborough, Detroit 15, Mich.

COIN MACHINES earn big money! Machines at $10.50 earn as high as $5.00 weekly profit. Place machines in stores, hotels, filling stations, etc., and your income starts immediately. Routes can be operated in spare or full time with no experience needed. We'll tell you how and send you a catalog describing our nut, candy, gum and postage vendors; also pinball machines, music boxes, etc. Write immediately to Parkway Machine Corporation, Dept. 15, 715 Ensor St., Baltimore 2, Md.

BIG MONEY and fun growing Live Miniature Ming Trees on your window sill. Write for Free rare tree seed and plan. National Nurseries, 8463-D South Van Ness, Inglewood 4, Calif.

NEW $$$$$ FABULOUS Home-Business "Jewelize" Finish. Free Sample. Free $$$$$ Plan. Pearl-Art, 7216-D Bear, Bell, Calif.

137 PLANS FOR starting home business. Details: Elite Co., 220-G Grand St., New York 13.

RAISE RABBITS. Start Right. See advertisement on page 32. American Rabbit Breeders.

MAKE MONEY At Home as renewal headquarters for all magazines. Liberal commissions. No experience—no capital needed. Supplies furnished. Write for Free Catalog. McGregor Magazine Agency, Dept. 520B, Mount Morris, Ill.

LEARN SEWING Machine "Big Money" Business. Repair, electrify, rent, trade, sell, spare time. New machines, motors, small parts, wholesale. Facts free. Taylor Service, Hamilton MI-4, Ohio.

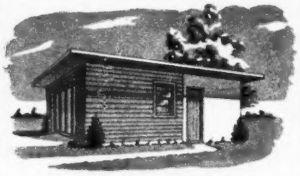
$25 WEEKLY WORKING two hours daily. No canvassing. No manufacturing. Lycke, Box 2471-C, Cleveland 12, Ohio.

EXTRA MONEY—No Selling—operate vendors. Amazing profits, details Free. Silver King, Suite 222, 622 Diversey, Chicago 14.

GOOD PAYING Business silvering mirrors, plating autoparts, reflectors, bicycles, bathroom fixtures, etc., by late method. No tanks or shop required. Outfit furnished. Free Booklet, Gunmetal Co., Ave. A, Decatur, Ill.

MAKE MONEY addressing envelopes. Our instructions reveal how. Paul Glenway, 5713 Euclid, Cleveland 3, Ohio.

GARAGE-SHELTER



Planning on building a double garage? You can combine security and practicality by engaging in this two-in-one project that includes a sturdy concrete shelter built into one corner. Shelter may be used as deep-freeze room, darkroom, etc. The large-scale plans include diagrams and full instructions. For your copy, remit $1.00 to MECHANIX ILLUSTRATED Plans Service, Fawcett Building, Greenwich, Conn. Please specify Plan No. HJ-18.

BOOKKEEPERS! BIG Earnings. Operate Bookkeeping-Income Tax Service. Latest Amazingly Simplified Plans, $2.00. Tackett's, North High, Salem 5, Ind.

RECAST OLD batteries into new. Latest Achievements. Battery Laboratories, Minneapolis.

START VENETIAN Blind Laundry. Profitable lifetime business. New machine. Free booklet. F. E. Co., 442 N. Seneca, Wichita 12, Kans.

FREE SAMPLES—Big profits showing amazing Glow-in-the-Dark specialties. House numbers, pictures, plastic novelties, ashtrays, keyholders, religious and nursery objects, etc. Madison Plastics, 303 Fourth Ave., New York 10, N. Y.

LEARN PIANO Tuning, Repairing—at home in 30 days. Unlimited Income. Phonograph recordings, tools and instructions furnished. Write Capitol City Tuning School, Dept. 445, 129 E. Michigan, Lansing 16, Mich.

IMPORT-EXPORT! OPPORTUNITY, profitable, world-wide, mail-order business from home, without capital; or travel abroad. Established World Trader ships instructions for no-risk examination. Experience unnecessary. Free details. Mellinger, 74, Los Angeles 24.

LEARN METALIZING baby shoes, jewelry, gifts. Bronze, gold, silver. Complete success plan free. Kiktavi Building, 7217-MI South Broadway, Los Angeles 3.

NEWEST SPARE, Full-Time Home Business. $5 to $10 hour possible. Paint with Suede—the finish with touch and eye-appeal. Beautify auto dashboards, signs, radios, toys, figurines, lamps—1,001 others. Complete, Step-By-Step Instructions sent for no-risk examination. Free details. Coast, 1004-CV So. Los Angeles St., Los Angeles 15.

"MAKE PRODUCTS"—Sell Mailorder Formula Catalogue Free — "Imsco," 6347 Parnell MI-4, Chicago 21, Ill.

MAKE DURABLE Plastic of Waste. Makes attractive floors, plaster, built-ins, stucco. Build good home $150.00 room. Bays Laboratory, Oklahoma City 9.

50% PROFIT. POWER Mowers. Home-store assembly. Dominate market. Franchise deal. Rotacut-RM, Excelsior Springs, Mo.

"MAKE PERFUME" Catalogue Free—"International," 6347 Parnell, MI-4, Chicago 21, Ill.

INCOME FOR Local Information. No selling: Write Neherco, La Verne, Calif.

BOOKKEEPERS, INCREASE earnings operating sensational bookkeeping service. C.P.A. system. Kern, 4942-C Vineland, North Hollywood, Calif.

PRINT WITHOUT Printing Press—Posters, banners, greeting cards, toys, glassware, neckties—anything! New "easy" Revolutionary Method. No special equipment or experience needed. Work full or spare time at home. No selling. We set up "your own local business." Wonderful $$$$$$$ opportunity. Free sample. Profitable ideas, beautifully illustrated plan free. Write Screen-Print, 1010-C South Los Angeles Street, Los Angeles 15.

BIG MONEY Making Opportunity. Exclusive line work uniforms. Jackets, pants, shirts, coveralls. Advertising embroidered. Every business prospect. Outfit Free. Master Div., Dept. 498, Ligonier, Ind.

MAKE FLEXIBLE Molds! Cast plaques, bookends, figurines! Free sample! H. Tooker, 630-E Chestnut, Hamilton, Ohio.

OPERATE "ESCOLATOR" Mailorder System, selling our products or any products. Fastest, most revolutionary mail-order system known. Write: Selbyco, Decatur 131, Ill.

COLORGLAZED CONCRETE pottery made without molds. Patented method. Cemetery products, novelties, tiles. Basement leaksealing. Money-making projects. Booklet, details free. Men only. National Pottery, Grand Rapids, Minnesota.

EARN $15,000-$30,000 ANNUALLY. Franchise protected. Guaranteed minimum $12,500 or money back. Live at home. No merchandise to buy. Selfemployed. One of most exclusive and noncompetitive businesses in United States and Canada. Send 50c for explanatory book. Money refunded when book returned. Harrell & Company, Box A-3, Louisville, Ill.

RAISE PHEASANTS On $100 Week Plan. Little capital and space can make you independent. Free details. Great Central System, Columbus 16, Kans.

LIQUID RUBBER, make flexible molds. Free sample. Chaney, 1130 E. 16th St., Jacksonville 6, Fla.

EARN EXTRA money weekly mailing circulars for advertisers. Complete instructions 25c. Siwaslian, 4317-A Gleane Street, Elmhurst 73, N. Y.

$35 WEEKLY ADDRESSING Envelopes. Instructions $1, refundable. Adservice, Spring Valley 32, N. Y.

TO $35.00 WEEKLY. Spare time, home operated mailorder business. Successful "Beginner's" plan. Everything supplied. Lynn, 10420-X National, Los Angeles 34, Calif.

LEARN SILK Screen Printing; Invisible Reweaving; Repair Dolls; Make Rubber Stamps; Natural Rubber for Molds. Sample and Catalogue of "40 Ideas" Free. Universal, Box 1076-M, Peoria, Ill.

MONEY IN New Greaseless Doughnuts. Start in kitchen. No smoke. Sell stores. Free recipes. Irving Ray Co., 3605 South 15th Ave., Minneapolis 7, Minn.

COLOR CONCRETE with chemicals. Marble-glaze cement benches, pottery, garden ornaments. Home—Shop. 10: brings sample, pictures. Hollywood Cementcraft, 8527-L Wonderland, Hollywood 46, Calif.

"HOW TO Raise The Money You Need." $2.98 postpaid. Refund if dissatisfied. Details free. Enterprise Bureau, Syracuse 2-M, N. Y.

BEGINNERS! GET money in your mail! Complete plan 50c. Lagomar, 476 Lombard, San Francisco, Calif.

CLASSIFIED ADVERTISEMENTS

OPERATE PROFITABLE mailorder business. Details. Natel, 411 Paulison, Passaic, N. J.

HOW AND where to obtain Capital? Free details, Star Service, Wapakoneta, Ohio.

SPECIALIZED MAGAZINES covering your field of interest help You to greater success. Get latest copies through our Easy-to-Get-Acquainted Service. Hundreds of business, trade, professional, educational, sport, hobby, laundry, legal, lumber, machinery, mail order, marine, metal, motion picture and others covering All interests. Send for List today. It's Free. Commercial Engraving Publishing Company, 34W North Ritter, Indianapolis 19, Ind.

NEW KIND Mail Order Business! Carry no merchandise. No selling, manufacturing, experience, advertising investment. Eye-opening proof free! Mann, 17-I William, Hillsdale, N. J.

MAKE PERFUMES At Home. Write, "Carey Laboratories," 1914 Chouteau MI-4, St. Louis 3, Mo.

FOR AN extremely profitable lifetime business, operate a Collection Agency. Quickly learned. Write Cole Associates, Syracuse 2-MI, N. Y.

MAKE $6.73 EVERY Time. You sell one—and they're amazingly easy to sell! We have new Adding Machines in original factory cartons you can sell for only $14.95 and you make 45%. They're executive model portables, precision built with automatic clearance, direct subtraction, fully guaranteed. Send for life size color photo with full details. Write today to Lightning Adding Machine Co., Inc., Dept. MI-8, 1260 West Second Street, L. A. 26, Calif.

$15.00 THOUSAND, HIGHEST prices addressing envelopes at home—longhand, typewriter. Torrey, A-9, Melrose 76, Mass.

LIVING MINIATURE ("Ming") trees only 10 to 20 inches tall. Grow at Home. Big Profits! Spare time opportunity. Fascinating! Amazing! Write for Free Seed Plan. National Nursery, Dept. CC, Inglewood 4, Calif.

START BUSINESS Without Capital! Reliance, 15-F Park Row, New York 38, N. Y.

$46 FROM SQUARE Foot Plywood; Jigsaw Necessary. Write: Woodarts, X-53, Bridgewater, Mass.

PROFITABLE HOME business, electroplating novelties, giftwares, autoparts, mirrors. Easy, inexpensive home processes. Free booklet. Tyco, Box 13231-DC, Houston 19, Texas.

WANTED! HOME Producers, By Manufacturers in our Clearing House Service. Become a sub-contractor, casting plastic products for these companies. Thousands of easy-to-make items required for consumer and industrial use. Cash in at home, without previous experience. Write Plastic Service Associates, Dept. M13, East Boston 28, Mass.

RICHES IN Mail Order. Big money facts free. Write How, Box 684-C, St. Louis, Mo.

START YOUR own business, in your own home. Write L. Scheffler, P. O. Box 236, Hamburg, N. Y.

START YOUR own profitable home mail-order business! We supply everything. Write today! Studio Products, Box 564-EA, Glendale 5, Calif.

EARTHWORM BREEDING? First, get unusual story, "An Earthworm Turned His Life." Free. Earthmaster, Dept. 4, El Monte, Calif.

TO THE modern home sell art—build ratchet Floorlamps. A proven Money maker. H. Schulzendorff, 3129 N. Holton, Milwaukee 12, Wisc.

TIN-CANS. TURN them into cash. Nine methods. Instructions 50c. Charles Company, 12-GAX, Norwood, Ohio.

FREE ELECTROPLATING Information. Money Making Plans. Send postcard for your copy. Highly Paid, Interesting, Uncrowded field. Plater B. Hyde, 327 West 120th Street, Los Angeles 61, Calif.

MAKE MONEY Mailing Cards, Circulars. Peaceful, Profitable. Paton, Box 55-V, New York 23, N. Y.

BOOK "505 ODD, Successful Businesses" free. Work home! Expect something Odd! Pacific-23C, Oceanside, Calif.

START A Buying Service, buy wholesale thousands nationally advertised products. Make big profits selling at sizeable discounts. Postcard brings details. American Buyers, 628-G Linden, Buffalo, N. Y.

BUY IT Wholesale! Manufacturers, distributors offer 850,000 items. Literature free. Olsen, 1231-C East Third St., Duluth 5, Minn.

BUY WHOLESALE! Nationally advertised appliances, housewares, jewelry, watches, etc. Free information concerning tremendous discounts. Econ-O-Mart, Box 535M, Morristown, N. J.

STOP MONEY Worries. Success Assured, Mailing Our Advertising Literature. Write Specialty Products, Box 166, Mt. Holly Springs, Penna.

FREE BOOKLET reveals amazing secrets behind 301 unique, profitable enterprises! Start sparetime! Home! Deumant Publications, 79-G Deumant, Kenmore 23, N. Y.

SAWDUST. TURN it into cash. Twenty methods. Instructions 50c. Charles Company, 12-GAV, Norwood, Ohio.

SELL FOOD Products To Homes, Stores, and by Mail. Sample 25c. Gordon Products, Box 23D, Pawtucket, R. I.

MAIL ORDER Business using profitable Free Advertising Method reaching 66½ million. Revealing information free. H. T. Seidel, 7070 Hollywood Blvd., Hollywood 28, Calif.

START OWN Business—home, office; booklet describing "137 Business Plans" free. Elite Co., 220-G Grand Street, New York 13, N. Y.

• • • HELP WANTED

FOREIGN & LATIN American Employment. 1953 "Foreign Service Directory" gives Up-To-Minute Facts on Military & Civilian Construction, Government Jobs, Major Oil Listings, Aviation, Transportation, Steamship Lines, Mining, Importers, Exporters, How-When-Where to apply, application forms, Hot List Firms Hiring. $1.00 postpaid. Global Reports, Box 883-MI, Hollywood 28, Calif.

CONSTRUCTION JOB List. Published Monthly. $1.00. Dempster's Construction Scout News, Dept. 268-FK, Bridgeport, Ill.

ALASKA!! LAST American Frontier. $1.00 brings 1953 Business Directory & Government Map. Military & Civilian Construction; Homestead & Highway facts; Mining, Aviation, Fur Farming; Grazing, Timber, Travel directions. List of firms hiring. How to apply. Alaska Opportunist, Box 92-MI, Hollywood 28, Calif.

JOIN THE Merchant Marine. Excellent Pay. Foreign Traveling. Free Details. Davenport's, 1170-C6 Broadway, New York 1.

OVER $1,400.00 A month are the wages of truck drivers, carpenters, electricians and others now being hired for work in Greenland. For complete foreign listings send $1.00. Also domestic listings $1.00. Construction Workers Service, 1111 Commerce Bldg. MI-1, St. Paul, Minn.

FOREIGN EMPLOYMENT Construction men, building trades, helpers, office men, others, interested in Foreign Projects. High wages, quarters, transportation. Send $1 for Foreign Construction Compendium and Application Forms. Foreign Service Bureau, Dept. MI-4, Metuchen, N. J. (Not an employment agency—no fees.)

NORTH ATLANTIC airbase job, hiring hundreds monthly. Laborers earn $1100 per month, skilled $1450, superintendents to $2250. Folio, $1. Jobservice, Box 30-M, Billings, Mont.

FOREIGN JOBS. Contracts underway and soon starting in Africa, South America, Canada, England, Europe, South Pacific, Middle East, Mexico and Alaska. Send $1.00 for foreign job news, information, application forms, etc. DCS Foreign Job News, Dept. 268-FL, Bridgeport, Ill.

OVERSEAS JOBS. Big pay, transportation, expenses. Clerical, professional, mechanical workers. Most all trades. Latest listings airline, construction, manufacturing, oil, steamship companies, government agencies, many other opportunities. Up to date information on securing employment, contracts, income tax, application forms. $1.00. Overseas Jobs, Box 335-D7, Baton Rouge, La.

LIVE ABROAD . . . as export representative. Unlimited job opportunities. Information $1.00. Box-A, 750 Winter, Jackson, Miss.

ALASKA. CONSTRUCTION Job. New Higher Wage Scale. Journeyman, Laborers. Information, Application Guide $1.00. Frank Gaskill, MBCO, Box 656, Bellevue, Wash.

SEE FOR Yourself! California offers top pay, best opportunities! $1.00 brings Men Wanted Ads from biggest Southern California daily's extra-large Sunday edition. Pacific Industrial, Dept. C-3, Box 832, Santa Barbara, Calif.

• • • MONEYMAKING OPPORTUNITIES

VENDING MACHINES—No selling required. Send for Free 32-page illustrated catalog describing our numerous coin machines; also showing you how you can earn Amazing Profits either full or spare time. Parkway Machine Corporation, Dept. # 5, 715 Ensor St., Baltimore 2, Md.

TYPEWRITER OWNERS Make Handsome Profits. Get details today. Groves Company, 682 Hastings 1, Neb.

$10,800 PROFITS! YOUR Own Mailorder Business! No Capital Risk! "Success Plan" (worth $2) Free! Write today! Treasury, 149 Storer, New Rochelle MX-17, N. Y.

NOTARY PUBLIC Commands More Money. Be One. Stationers, Helotes, Texas.

ADVERTISING BOOK Matches—Cash in on big demand; sell union label matches. Cuts for all businesses and political parties. Free powerhouse selling kit, low prices, protection guaranteed on repeat orders. Cash commissions. Superior Match Co., Dept. FX-453, 7530 Greenwood, Chicago.

DETECTIVES EARN Big Money. Experience unnecessary. Detective Particulars free. Write, George Wagoner, 125-J West 86th, New York 24.

START YOUR Own Business On Credit. Your own boss. 1586 of our Dealers sold $5,000 to $27,500 in 1951. We supply stocks, equipment on credit. 200 home necessities. Sales experience unnecessary. Pleasant, profitable business backed by world-wide industry. Write Rawleigh's, Dept. D-U-MOM, Freeport, Ill.

SELL TITANIA Gems; $9.75 carat wholesale. More brilliant than diamonds. Free catalogue. Diamonite, 1404-X Mitchell, Oakland 1, Calif.

FREE BOOKLET reveals amazing secrets behind 301 unique, profitable enterprises! Start sparetime! Home! Deumant Publications, 83-G Deumant, Kenmore 23, N. Y.

START A Buying Service, buy wholesale thousands nationally advertised products. Make big profits selling at sizeable discounts. Postcard brings details. American Buyers, 631-G Linden, Buffalo, N. Y.

TIE-BREAKER PICTURE puzzles exposed, $2.00. Wenograde, Box 1495, Phila. 5, Penna.

NEWSPAPER CLIPPING Bureau! Instructions 25c. Schrader, 803 Wisconsin, Peoria 4, Ill.

WE PAY Cash For Boxtops, Labels, Wrappers, Coupons, Etc.!! Particulars free. Boxtops, 1211-MI Bryden, Columbus 5, Ohio.

MAKE EXTRA Money. "Highways To Coin." Tells How. Sample 25c. Siegel, Box 84MI, New York 12, N. Y.

FREE BOOK "505 Odd, Successful Businesses." Work home! Expect something Odd! Pacific-22C, Oceanside, Calif.

• • • PROFITABLE OCCUPATIONS

MUSHROOMS GROWN Boxes Barrels. Manureless Process 50c. Spawn $1.00. Gordin 553 William, Winnipeg, Manitoba.

"HOW TO Make Money With Home Workshop" describes amazing methods used by hundreds of successful craftsmen. Tells what to make. How to sell workshop output spare time. Write at once for details. Craftsman, 115-B7 Worth Street, New York City.

DETECTIVES—MAKE Secret Investigations. Interesting occupation. Write, George Wagoner, 125-J West 86th, New York 24.

RAISE EARTHWORMS Backyard. $200. Monthly Possible! Illustrated booklet 25c. Ozark Worm Farm-E, Willow Springs, Mo.

WANT A Diesel Job? New Opportunities to increase income. Higher Pay. More Money. We can help you Qualify. Tools. Shop method home training. Write today! Diesel, Tractor, Heavy Equipment Division, Interstate Training Service, Dept. 4D, Portland 13, Ore.

POWER MOWERS—$19.95. Home-store assembly. Extra profit. Franchise deal. Smith Agency-74, Excelsior Springs, Mo.

MAKE TOUGH, Durable Plastic — 1c pound. Makes attractive flooring, plaster, stucco, built-ins. Build good home $150.00 room. Bays Laboratory, Oklahoma City 9.

BOOK "505 ODD, Successful Businesses" free! Work home! "Odd"!! Pacific-24C, Oceanside, Calif.

FREE BOOKLET reveals amazing secrets behind 301 unique, profitable enterprises! Start sparetime! Home! Deumant Publications, 85-G Deumant, Kenmore 23, N. Y.

THRILLING, PROFITABLE Home Business. Make fast-seller chenille monkey trees, dolls, flowers. Terrific holiday demand. Information free. Velva, Bohemia 14, N. Y.

$40.00 WEEKLY, MADE growing mushrooms, Fresh, Dried, Dominion Patent 331583. Free Spawn. North American, 169M Yonge, Toronto, Canada.

BIG PROFITS! Operate Screen Printing Business. Joe Jones, Box 321, Meridian, Miss.

GROW MUSHROOMS. Cellar, shed, and outdoors. Spare, full time, year round. We pay $3.50 Lb. We paid Babbitt $4,165 in few weeks. Free Book. Washington Mushroom Ind., Dept. 102, 2954 Admiral Way, Seattle, Wash.

WANT FAMILY or man take over 100 room motelized hotel. Buyer or manager. $100 week, free apartment, share $18,000 annual profit. Disabled veteran forced to quit. Sell small down, boat, diamonds, what have you, balance $400 month. Price $75,000, much under cost, 35,000 square feet. Ideal location. Send for particulars. Owner, Townhouse, Madisonville, Ky.

$5000 FROM HALF acre growing Ginseng, crop bought, Particulars 10c. Associated Growers, Sperling, Manitoba.

BUY WHOLESALE thousands nationally advertised products at big discount. Free "Wholesale Plan." American Buyers, 627-G Linden, Buffalo, N. Y.

• • • BARGAINS

APPLIANCES, MOWERS, Home Supplies. Save. Send Dime. Box 89, Troy 4, Ohio.

FREE—RAZOR Blades. Service Plan! Gift Offer! Flasch Buyer Service, 6640 Bramble Avenue, Cincinnati 27, Ohio.

• • • CHEMICALS & SUPPLIES

CHEMICALS, SUPPLIES. Catalog 15c. Laboratory Sales, Box 161-X, Brighton, Mass.

• • • FORMULAS, PLANS

LABORATORY TESTED Formulas. Lists Free. Pont Chemical Company, Terre Haute 3, Ind.

CONCENTRATED VEGETABLES. Highest grade, raw, dehydrated, in tablet and powder form. No drugs. Write today for free circular. Kiro Concentrated Foods, Tama, Iowa.

YOUR OWN Swimming Pool with filter system for less than $200. Send $2.75 for complete plans. Satisfaction guaranteed. Davrim Engineers, Box #7, North Kenova, Ohio.

LIVING ROOM WORKBENCH

An ideal project for the weekend craftsman, this dual-life bench has the appearance of a handsome chest when not in use. There's plenty of room for all of your tools, and the convenient tool rest may be removed when you're through for the day. Plans include full construction details, perspective views, step-by-step instructions and photographs. Remit 25 cents to *Mechanix Illustrated* Plans Service, Fawcett Building, Greenwich, Conn. Ask for Plan No. F-2.

ANY FORMULA $3.00. Chemical Instruction Sheet-catalog 10c. Belfort, 216 W. Jackson, Chicago 6.

REAL MANUFACTURING Formulas. Lists free. W. Cummings, 228 Gordon, Syracuse N. Y.

LATEST—BEST Formulas. Genuine Moneymakers. Free literature. Kemistry, Park Ridge 40, Ill.

• • • SPARE TIME OPPORTUNITIES

MAKE MONEY Spare Time plus New Car as encouragement bonus. Amazing 60 gauge nylons 3 pairs guaranteed 3 months or replaced Free. Write Wilknit, 1834 Wash., Greenfield, Ohio.

• • • TREASURE FINDER

TREASURE FINDERS for gold, silver and minerals. Money back guarantee, best available. Also Geiger counters for uranium prospectors, free information. Write Goldak Company, 1546 West Glenoaks, Glendale 1, Calif.

GOLD AND Silver Detectors, Geiger Counters for Uranium. Mineralights. Powerful—Sensitive—Guaranteed! Free information. Detectron Co., 5631 Cahuenga, North Hollywood, Calif.

SELECTIVE METAL and mineral detector. Revolutionary design. Distinguishes metals from black magnetic sands. Readily detects metals under salt water. Also Geiger counters. Free literature. Gardiner Electronics Company, 2018 N. Dayton, Phoenix, Ariz.

SEEK GOLD, Uranium, Treasure. Latest supersensitive detectors. Circulars free. Glen Scientific, Box 151-F, Glen Ellyn, Ill.

TREASURE-MINERAL LOCATORS—Geiger Counters, extra light weight, ultra-sensitive, lowest cost, credit purchase plan available, factory guaranteed free illustrated literature. Fisher Research Laboratory, Inc., Palo Alto, Calif.

• • • PRINTING, MULTIGRAPHING, MIMEOGRAPHING

BUSINESS PRINTING. Samples, Prices Free. Howprint, 723-D Eunice, Webster Groves 19, Mo.

100 ENVELOPES, 100 5½x8½ LETTERHEADS—$1.50. Stephen Komes, 3809 S. Herman, Milwaukee 7, Wisc.

250 NOTEHEADS OR 6¾ Envelopes $1.50. A. Selditch, Dept. M., 38 Rauber St., Rochester 5, N. Y.

500 EACH ENVELOPES, bond letterheads —$6.50. Kreg Press, Windsor 4, Vt.

100 8½x11 LETTERHEADS AND 100 envelopes. $2.00 postpaid. Rush service. Samples free. Catalpa Press, 5519 N. Clark, Chicago 40, Ill.

PRINTING, MIMEOGRAPHING — Complete Letter Service. London, Box 1756, New London 1, Conn.

• • • PRINTING OUTFITS & SUPPLIES

PRINTING OUTFITS, type, supplies. Send dime for illustrated supply book and samples. Kelsey, Inc., H-57 Meriden, Conn.

PRINTING MACHINERY. Type Supplies. Lists 3c. Turnbaugh Service, Loysville, Penna.

MAKE YOUR Own self molding rubber printing cuts. Plexirubber, Argyle 3, Wisc.

• • • RUBBER STAMPS & MARKING DEVICES

RUBBER STAMPS—Your name and address $1.00. Anderson, 1704 5th Ave., East, Hibbing, Minn.

CLASSIFIED ADVERTISEMENTS

• • • STAMP COLLECTING

TERRIFIC COLLECTION — Unsurpassed Bargain! Animal stamps from Ifni. Iceland fish. Gold mining in British Guiana. Map, Coat of arms of Nyasaland. Croatian imperforate set. Red cross airmails from Spain. Beautiful flowers in natural colors, from Congo, Colombia, San Marino, etc. Triangles from many countries. Multicolored stamps of Cape Verde. New, big set from Uruguay. Reproduction of first U. S. stamp. Stamps honoring landing of Columbus. All these, plus more than a hundred others, for only 50c, to introduce our bargain approvals. Money-back guarantee on this breathtaking, unusual collection. Write today. Wolverine Stamp Service, Dept. E-1, Fruitport, Mich.

FREE! POWERFUL Magnifying Glass For 5c Post. Bargain lists and approvals. Jamestown Stamp Co., Dept. 229, Jamestown, N. Y.

200 DIFFERENT, INCLUDING Roosevelt triangle. 5c to approval applicants. K. Avalon Stamp Co., Springfield, Mass.

FREE STAMP Zoo! Rhinoceros, Snake, Giant, Pygmy, Emu, Kangaroos, Koalabear, Kookaburra and other wild animals. Free with exciting approval. Niagara Stamp Co., Niagara-on-the-Lake 53, Can.

SORT AND Save approvals ½c and up. Dimond, 3152 Cuthbert, Oakland 2, Calif.

1,000 UNIQUE COLORFUL attractive mounted stamps 1c—2c each. Rushed. Niagara Stamp Co., Niagara-on-the-Lake 73, Can.

PAY LESS—Get More—Packets By Country Or Subject—Mammouth List Free—Introductory Special 100 Different Canada 39c. Econostamps, Box 168, Riverside 3, Calif.

HYGRADE U. S. approvals priced to please. Weenigman, 1933 Patterson, Chicago 13.

POLAR BEAR Triangle: Giant George Washington Six Colored Ecuador, Arctic Triangle, First American Commemorative. Corsica, Devils Island, Others. Everything free with approvals. Capital Stamps, Little Rock 5, Ark.

IS YOUR Hobby Too Expensive? Are high prices keeping your collection on the shelf? Try our 1c and 2c foreign approvals in books of 1,000, or U. S. at bargain prices. "Clark Stamp Co.," Dept. N-5, Muskegon Heights, Mich.

FREE—COMPLETE set of Famous Americans, Flags, Parks and Presidentials to approval buyers. Send 3c for 15 of the above stamps plus full particulars. Triboro Stamp Company, 145 Nassau Street, Dept. 304, New York 38, N. Y.

60,000 DIFFERENT! IN Books, On Approval. Cole, 43-J Rinewalt, Buffalo 21, N. Y.

WE GIVE you mammoth international albums, Scott's catalogues, hinges, complete accessories, when you buy our wonderful foreign approvals. Don't write unless you intend to buy. But don't buy elsewhere without comparing our more generous offers. Bargain Stamps, Santa Anna, Calif.

GREAT FREE Offer—Weird mosquito stamp, thrilling bicycle race, gorgeous orchid, colorful native drummer, gigantic diamond airmail, stamp albums, all to our approval buyers. Bell Stamp Service, Dept. C-4, Bell, Calif.

WOW! 203 ALL Different Germany 10c! Zeppelins, Semipostals, Airmails, High Values, etc., to new customers. Jamestown Stamp, Jamestown 515, N. Y.

200 EXOTIC JAPAN Stamps—10c! Kenmore, Milford, K-59 N. H.

1050 DIFFERENT STAMPS given to approval applicants becoming customers. Send 3c for particulars, lists and approvals. Bryson Stamp Company, Drawer FM1, Rossford, Ohio.

50,000 STAMP GRABBAGS 25c each. Anderson, 630C, Bingaman, Reading, Penna.

50 DIFFERENT U. S. 5c. Price Lists Included. Bookman, Maplewood 4, N. J.

65 ALL DIFFERENT U. S. Stamps, includes 19 Century, Commemoratives, Airmails and $5.00 Stamp. Only 10c Approvals. Willett Co., Box 511-K, Port Chester, N. Y.

FREE—ILLUSTRATED Catalog! Kenmore, Milford, C-59 N. H.

RARE OCTAGONAL Stamp, Giant Triangle, Gorgeous Diamond, Also Mammoth And Midget Stamps Given To Foreign Approval Buyers. Gifts With Purchases Including Scott's International $6.00 Album, Also Latest Scott Catalogues. Plymouth, Dept. A-8, Bell, Calif.

81 MULTI-COLORED FLAGS of the world. Only 15c. Kenmore, Milford F-59, N. H.

HOW TO Recognize Rare Stamps. Free Book Illustrated! Kenmore, Milford, H-59 N. H.

BEAT THIS If You Can! Over 520 different stamps, catalog over $11. For only 25c to serious adult approval applicants. Free illustrated price list. Cosmophilatelist, Andover, N. J.

LOOKING FOR Better U. S. Approvals?? Write New-Way Stamp, Lawrence, Mass.

CANADIAN COLLECTION—Free—Includes early Victorian Issues—Jubilees—High Values—Commemoratives—Special Issues—Newfoundlands—Pictorials, etc., etc., together with Philatopic Magazine all free. Send 5c postage. Empire Stamp Company, Dept. MM, Toronto, Can.

FREE! BIG United States stamp catalog—including value guide and identifier, plus check list. Hundreds of illustrations. Approvals. Harrisco, Boston 17-V, Mass.

VALUABLE AIRMAIL Book plus gorgeous World-Wide Airmail collection 10c. Includes $10,000 Stamp, Zeppelin, Scarce Triangle, many others with beautifully illustrated Book, only 10c with choice approvals and bargain lists. Jamestown Stamp Co., Jamestown 711, N. Y.

FREE. SCOTT'S International Album. Other big premiums. Full particulars with approvals. Raymax, 68-K Nassau St., New York 38.

WORLD'S LARGEST Stamp (7½x14 inches). A real curiosity! Retails for 50c, only 3c to approval applicants. Tatham Stamp Co., Springfield 9, Mass.

UNITED STATES, 58 different including 8 airmails, 15 commemoratives, 10c. Approvals. Sunset, Dept. 3-S, Box 47, South Gate, Calif.

PHANTOM PLANE Airmails — French West Africa (C12-14), showing plane over Dakar, phantom plane, storks, natives—valuable stamps actually flown in Africa. These big, handsome stamps plus a 50 country packet for just 25c to introduce attractive approvals. Modern Stamp Co., Dept. C-1, Ferrysburg, Mich.

NEW SENSATIONAL All Nations Stamp Finder-Dictionary, 15c to approval buyers. Noel Stamps, 3916M W. 26th, Chicago 23, Ill.

FREE! BIG Illustrated Catalog listing everything for the Stamp Collector. Approvals. Harrisco, 201 Transit Bldg., Boston 17, Mass.

U. S. ARMY & Navy Heroes on Stamps; 10c with United States approvals. Locust Stamp Co., Box 509M, Ossining, New York.

300 STAMPS FOR Only 10c! This mammoth value includes Airmails, Pictorials; stamps from strange Countries catalogiung up to 25c each! Also approvals. Mystic Stamp Company, Camden 30, New York.

NUDES SET; Colorful approvals—10c!! Atlas, 2830-N Eisenhower, Racine, Wisc.

SAVE UNNECESSARY wear on your album pages, save time, but most of all, save money and buy from our quality approvals. Everything mounted and marked with Scott's catalog number and prices, but at a big discount. First try will satisfy. Roseland Stamp Co., Dept. 8-A, Spring Lake, Mich.

MINT FIVE Pound British Colony Stamp, guaranteed genuine, face value $25.00, just 25c to introduce our famous approvals. Viking 130-MM Clinton St., Brooklyn, N. Y.

FREE TRIANGLES, U. S. Price List. Philatelic House, Rockville Centre, N.Y.

FREE BAHAWALPUR Jubilee Set With Approvals. Lighthouse, Box 1516D, Colorado Springs, Colo.

OLD SCARCE U. S. Seconds On Approval. Slight imperfections, lowest prices. Hernfelder, Clintonhill Sta., Newark 8, N. J.

UNITED STATES—40 different 10c; 40 different Commemoratives 25c. Seidenberg, Appleton 944, Wisc.

UNITED STATES Coins! Bargains! Sullivan's, 127-C East Fourth, St. Paul 1, Minn.

FREE—ILLUSTRATED Catalog For Stamp Collectors. Approvals. Burke, South Woodbury, Vt.

100 DIFFERENT 10c WITH fine approvals. Jacobsen, 4395 Broadway, New York 33, N. Y.

50 DIFFERENT FINLAND 10c with approvals. Carrolls, E. 1817-B-Sprague, Spokane, Wash.

FREE! 25 DIFFERENT Indian stamps given approval applicants sending 3c postage! Giant premium plan! Kuehl, 3125 East K, Tacoma 4, Wash.

25 DIFFERENT GREECE only 5c to approval applicants. M. Wineholt, Woodbine, Penna.

U. S. ILLUSTRATED Bargain List Free. Stone, 45 Bromfield, Boston 8-M, Mass.

START YOUR Own Stamp Business. Send for Free circular. Donald Shepard, Box 1147, Chicago.

AFRICAN "BEAUTIES"—Savages—Exotic Lands—"Queer Countries"—Everything 3c with approvals! Saxon, Vista, Calif.

MINT KING George Coronations from 5 different British Colonies only 10c with approvals. Walter Welles, Box 1246-L, Church St. Station, New York City 8.

327 DIFFERENT STAMPS 25c! Including Early Canada, Newfoundland, British Colonies, Vatican, Red Russia, Hitler Heads, Indian States, Animals, Airmails, French Colonies, rarities, unusuals. Every stamp different. Rare bargain only 25c with our Bargain Approvals. Money back guarantee. Niagara Stamp Co., Niagara-on-the-Lake 63, Can.

• • • RARE COINS

FREE! FOREIGN Coin, banknote and Coin Collectors Illustrated Catalog to approval service applicants. Send 3c postage. Tatham Coinco, Springfield 9, Mass.

WHAT ARE your coins worth? Amazing Fell's new United States coin book. Everything on every single coin minted—Worth, value, how to sell, speculating, investment; other valuable facts. Clothbound, 150 illustrations. Send no money. Pay postman only $1.50 (plus postage) or $1.50 postpaid (refundable). Order now! Fell Publishers, 386C4 4th Ave., New York 16, N. Y.

$10.00 EACH FOR certain Lincoln pennies, Indianheads $50.00. Send dime for booklet listing prices paid. Lincoln Coin Company, D-507, Glendale, Ariz.

BURMA NOTE and illustrated 90pp coin catalogue, 25c. Shultz, Salt Lake 10, Utah.

• • • OLD STAMPS WANTED

OLD STAMPS Wanted. I will pay $100.00 each for 1924 1c green Franklin stamps, rotary perforated eleven (up to $1,000 each unused). Send 10c for large illustrated folders showing Amazing prices paid for old stamps, coins, and collections. Vernon Baker, MI-34, Elyria, Ohio.

• • • OLD COINS WANTED

WANTED—1894-S DIME. Pay $500.00. Certain 1913 nickel $1,000.00. 1901-S quarter $20.00 to $150.00. Hundreds of others. Know their true value. Complete Illustrated Catalogue 25c. Worthycoin Corporation (D-332) Boston 8, Mass.

PENNIES WANTED! $50.00 paid for certain Indianheads. Certain Lincoln pennies, $10.00. Send dime for illustrated folder listing coins wanted and prices paid. J. Martin & Sons, Box M-141, South Bend, Ind.

• • • EDUCATION & INSTRUCTION

HIGH SCHOOL—No Classes. Study at home. Spare Time. Diploma awarded. Write for Free Catalog HAJ-26. Wayne School, 2527 N. Sheffield, Chicago 14, Ill.

BOOKKEEPERS! INCREASE your earnings! Operate your own simplified "Dollar-A-Week" Bookkeeping and Tax Service. Full or spare time. Details Free. No obligation. Ellis, Box 202, Cedar Grove, N. C.

WANT A Diesel Job? New Opportunities to increase income. Higher Pay. More Money. We can help you Qualify. Tools. Shop method home training. Write today! Diesel, Tractor, Heavy Equipment Division, Interstate Training Service, Dept. 4D, Portland 13, Ore.

BE A Real Estate Broker. Study at home or in classrooms in leading cities. Write for Free Book today. Weaver School of Real Estate, 303 Law Bldg., Kansas City, Mo.

RAISE ORCHIDS—at home—big profits—fascinating. Year 'round any climate. No Greenhouse. Instructions, Including 3 Orchid Plants, sent for no-risk examination. Free details. Flowerland, 601-L S. Vermont, Los Angeles 5.

PRACTICAL NURSING—Learn Easily at Home, Spare Time. Big demand, good earnings. High School not necessary. Write for free facts. Wayne School, Dept. FF-15, 2527 Sheffield, Chicago 14, Ill.

IT'S FUN learning a language by Linguaphone. At home, in leisure time, quickly, easily master Spanish, French, German, Russian, Japanese—29 languages by Linguaphone Conversational Method. Save time, work, money. Send for Free book. Linguaphone Institute, 145-04 Mezz., Rockefeller Plaza, N. Y.

MEDICAL LABORATORY Technicians in great demand. We train you in your own home. Catalogue free. Imperial Technical Institute, Box 973-A, Austin 65, Texas.

STINSON 150 PLANS

For either scale or beauty this rubber powered replica of the famous lightplane is hard to beat. Sturdy construction and good aerodynamic proportions, make this model ideal for scale flying competition. Full size, easy-to-understand plans contain perspective views, photos and detailed instructions. Plan No. 368, price 50 cents. Send order and remittance to: Mechanix Illustrated Plans Service, Fawcett Building, Greenwich, Connecticut.

USED CORRESPONDENCE Courses and Books sold and rented. Money back guarantee. Catalog Free. (Courses bought.) Lee Mountain, Pisgah, Ala.

GET A Gov't Job! Men-Women; 18-55. Start high as $316.00 month. 50,000 jobs open. Qualify Now! Experience often unnecessary. Get Free 32-page Civil Service book showing jobs, salaries, requirements, sample tests. Write: Franklin Institute, Dept. X-28, Rochester, N. Y.

FREE "CAREER Chart." Mention occupation. Details. Professor Martin, Sunfield, Mich.

HOME STUDY course, drugless therapy. Free Literature. Inst. of Drugless Therapy, Tama, Iowa.

PIANO TUNING pays. Learn this profitable profession at home. Our Tonometer and mechanical aids make learning easy. No knowledge music necessary. Diploma granted. Largest and oldest school—55th year. G.I. approved. Write for booklet. Niles Bryant School, 87 Bryant Bldg., Washington 16, D. C.

INCREDIBLE! LOOK under "Miscellaneous!" Bijou, Box 1727-LW, Hollywood 28, Calif.

COMPLETE YOUR High School at home in spare time with 55-year-old school. Texts furnished. No classes. Diploma. Information booklet free. American School, Dept. X428, Drexel at 58th, Chicago 37, Ill.

ENGINEERING HANDBOOKS—standard references, latest editions. Literature free. Paullin, 109MD, Loudonville, Ohio.

YOU SHOULD Be Rich. Success "Career Chart" with personal letter. Mention occupation. Plans. $1. Satisfaction guaranteed. Professor Martin, Sunfield, Mich.

• • • BOOKS, PERIODICALS

BOOKHUNTERS! ALL Subjects. Send Wants! Jaher Book Service, 620-M East 178 Street, New York 57.

FASCINATING BOOKS—24 assorted illustrated humor booklets, $1.00. Sparkling cartoons; illustrated catalog 10c. Aladdin Book Co., 210-H Fifth Ave., New York 10.

BOOKHUNTERS! SCARCE, Unusual, Miscellaneous Books Supplied. Atlantic Book Service, 2F Lawrence, Charlestown 29, Mass.

BOOKS OF every description including Hobby, Handicraft, Novels, Tricks. Catalog 10c. Rothleder, "102MI" Cathedral Station, New York 25.

AMAZING NEW Adult Book Bargains. Send Dime. Mell Vallon, 63 Perry, New York 14, N. Y.

• • • RADIO, TELEVISION SUPPLIES & INSTRUCTION

MAKE SIMPLE, Tubeless, Batteryless Distance-Getting Crystal Radios. Crystal and illustrated instructions 25c postpaid. Allen, 427-M, Clinton, Mo.

FREE RADIO Tester, Tools, Soldering Iron. Build and keep 15 guaranteed high quality Radios—only $19.95 complete. No experience required. Enclose 50c for valuable Radio-TV Repair Guide and Kit Catalog. Progressive Electronics, 497 Union Ave., Dept. MI-4, Brooklyn 11, N. Y.

TV-FM ANTENNAS. All types including UHF. Mounts, accessories. Lowest prices. Wholesale Supply Co., Lunenburg 3, Mass.

FREE 236 PAGE 1953 Television-Radio-Electronic Catalog! World's largest stocks, lowest prices. Complete supplies for builders, experimenters, amateurs, servicemen. Latest television, radios, phonos, recorders, sound equipment. Thousands of parts, tubes, test instruments, books, diagrams. Top quality money saving values. Get yours now! Allied Radio Corp., 833 W. Jackson Blvd., Dept. 45-D-3, Chicago 7, Ill.

MAKE MONEY Repairing Radios, Televisions, experience unnecessary. Course, parts, tools. $20.00. Literature free. Stegotronics, Colchester, Conn.

FREE CATALOGS, wholesale offers television, radios, test equipment, parts, tubes, etc. Popular Elec., 250 Crown St., Brooklyn 25, N. Y.

• • • MUSICAL INSTRUCTION

SONG POEMS wanted to be set to music. Send poems. McNeil, Master of Music, 510 MI South Alexandria, Los Angeles, Calif.

SONGWRITERS! SEND poems, songs. Music Service, MI, 243 West 72nd St., New York 23.

POEMS WANTED for musical setting on percentage basis. Free Broadcasts. Sooner Song Co., Box 8336, Dept. MI, Oklahoma City 14.

SONGWRITERS: PROTECT your ideas! Do not mail material! Write for safe publisher procedure First! Song Service, Dept. MI, 333 West 56th Street, New York 19, N. Y.

POEMS WANTED For Musical Setting. Send poems for free examination. Five Star Music Masters, 629 Beacon Bldg., Boston, Mass.

• • • MUSIC INSTRUMENTS

ELECTRIC GUITARS, accordions, amplifiers. Wholesale. Free catalog. Carvin, Baldwin Park, Calif.

• • • AUTHOR SERVICE

BEGINNING WRITERS: Get $1 to $20 checks daily writing simple children's stories, articles, poetry in your spare-time. Experience unnecessary. Our instructions reveal how. Details Free. W. Herman, 7016 Euclid, Cleveland 3, Ohio.

NO LUCK Finding A Book Publisher? Write for Free Booklet MX. Vantage Press, 120 West 31, N. Y.

• • • CARTOONING

"HOW TO Make Money With Simple Cartoons"—A book everyone who likes to draw should have. It is free; no obligation. Simply address Cartoonists' Exchange, Dept. 354-C, Pleasant Hill, Ohio.

CLASSIFIED ADVERTISEMENTS

EARN MONEY Evenings, copying and duplicating comic cartoons for advertisers. Adservice, Argyle 3B, Wisc.

SIGN PAINTING taught at home. Test lesson free. Ben Kerns, Box 812-M, Greenville, S. C.

• • • MAGIC TRICKS, JOKES, PUZZLES

500 TRICKS, DOUGLAS famous 120-page catalog, only 10c. Fastest service to magicians for 30 years. Send 10c today. Douglas Magicland, Dept. 3, Dallas, Texas.

FLOATING CIGARETTE Trick With Instructions 25c. Eastwood, 694½ Jefferson, Chillicothe, Ohio.

2500 TRICK CATALOGUE (512-pages), pocket, parlor, stage. World's Finest Magic. Catalogue $2.00 (dollar trick included free). Kanter's, R-1311 Walnut, Philadelphia 7.

MAGIC—PARLOR, Stage. Joker's Supplies. Lower Prices. Giant Catalog 25c. (Refunded.) Top Hat Magic, Evanston 23, Ill.

125 CARD TRICKS Book And Catalog, 35c. Magitrix, 133 East Mishawaka Avenue, Mishawaka, Ind.

16 WORLD'S BEST card tricks and catalog 25c. Sterling Magic, Royal Oak, Mich.

BIG FUN Kit! Tricks, jokes, novelties, books. Real Gay stuff. Howls galore. $1.00. Johnson, 414 McRae, Wilmington, N. C.

JOKER'S NOVELTIES. Send 10c for new list and free joke item. Garden City Fun Shop, 654 Franklin Ave., Garden City, N. Y.

• • • VENTRILOQUISM

LEARN VENTRILOQUISM. 3c stamp brings particulars. Smith, Dept. 250, 801 Bigelow, Peoria 5, Ill.

• • • HYPNOTISM

STUDY HYPNOTISM! Amazing Illustrated lessons. Simple understandable language. This course tells how practical hypnotism is performed: over telephone, on stage, conquering timidity, dominating others. Full price only $2.95, postpaid; or C.O.D. plus postage. Satisfaction or refund. Order "Hypnotism Course" today. Nelson Company, 210 S. Clinton, Dept. 2DX-3, Chicago 6.

HYPNOTISM, SAMPLE lesson free! Write Baltimore School of Hypnotism, Dept. 304-B, 4214 Belmar Avenue, Baltimore 6, Md.

LEARN HYPNOTISM with this amazing record! Hypnotizes any number, then magically transfers control to you while subjects are hypnotized. Complete instructions. Only $2.95 ppd. Hypno Records, Box 405, Hermosa Beach, Calif.

FREE ILLUSTRATED Hypnotism, Self-hypnosis Catalogue. Write: Hypnotist, 1324 Wilshire, Hollywood 17M, California.

HYPNOSIS AND Self-Hypnosis, Complete course. Free details. Columbia Company, 5864-B Hollywood Blvd., Hollywood 28, Calif.

HYPNOTIZE INSTANTLY, Thoroly!! World's largest dealer offers jumbo catalog describing three hundred books, courses—quarter. Nelmar, 3424 Diversey, Chicago 47, Ill.

HYPNOTISM COURSES. Lowest prices. Free books. Write for details. Collins Company, Box 5207, San Francisco 1, Calif.

• • • CHALK TALKS

TRICK CHALK Stunts. Catalog 10c. Cartoonist John Balda, Oshkosh, Wis.

• • • DETECTIVES

DETECTIVE TRAINING. Phillips Secret Service System, 1917-G North Kenneth, Chicago 39, Ill.

DETECTIVES—WORK Home—Travel. Experience unnecessary. Detective Particulars free. Write, George Wagoner, J-125 West 86th, New York 24.

• • • TATTOOING

TATTOOING COURSE And Supply Brochures. 25c. Zeis School, 728 Leslie, Rockford, Ill.

• • • DEVELOPING, PRINTING & FINISHING

JUMBO PRINTS (deckle edge)—8 to 12 exposure Film 39c per roll, developed and printed. Same-Day Service. Dean Studios, Dept. 6, Des Moines 2, Iowa.

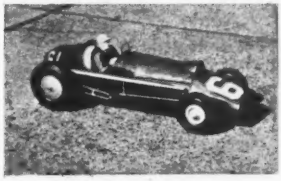
• • • CAMERAS, EQUIPMENT & PHOTO SUPPLIES

FREE PHOTOGRAPHIC Bargain Book packed with hundreds of sensational values in still and movie cameras, lenses and latest accessories. Super savings for you in new and used equipment. No Money Down—up to 15 months to pay. Liberal trade-in allowances, too, on your equipment. Write now for your free copy to Central Camera Company, Dept. 13D, 230 S. Wabash Ave., Chicago 4 (Photographic Headquarters Since 1899).

AMATEUR PHOTOGRAPHERS, Easy plan to turn your spare time into cash. $100.00 a week or more!! Send for Illustrated Brochure & Full Information, enclose 25c to cover postage and handling charges. Harrison Studios, 13561-H Ventura Blvd., Sherman Oaks, Calif.

35MM ENLARGER. Large-size plans for the construction of an enlarger expressly designed to be used with miniature negatives are now available for readers of MI. This enlarger uses a single condenser which also serves to hold the negative absolutely flat in the focal plane. For the easy-to-follow drawing, send 50 cents to the MI Reader Plan Service. Fawcett Publications, Inc., Greenwich, Conn. Ask for Plan No. P-4A.

CUMMINS DIESEL



This front wheel drive reproduction of the widely acclaimed Cummins Diesel racer will be an outstanding addition to any modeler's display rack. The general lines follow the original car as closely as possible. The full-size plans include a bill of materials, concise instructions and many helpful photos. Send 50 cents to *Mechanix Illustrated* Plans Service, Fawcett Building, Greenwich Conn. Please specify Plan No. 431.

ENLARGER: FIFTY cents will buy the complete plans and instructions for the building of MI's Parallel Arm Enlarger. It has been especially designed to accommodate all cameras from a 35mm Argus to a 4x5 Speed Graphic. Your own camera and lens form the optical and focusing system. This enlarger has been built by dozens of enthusiastic amateur photographers. Send your remittance and request to Fawcett Publications, Inc., Greenwich, Conn. Ask for Plan No. P-2A.

BUY WHOLESALE nationally advertised cameras, photo supplies, thousands other products at big discount. Free "Wholesale Plan." American Buyers', 629-MM Linden, Buffalo 16, N. Y.

CONTACT PRINTER. Plans and instructions to build MI's famous contact printer now available. Will take all negatives up to and including 4x5 in. as well as postcard size. The easy-to-follow drawings can be used as full-size templates if desired. Send 50c to Fawcett Publications, Inc., Greenwich, Conn., and ask for Feature Plan No. P-1A.

WHOLESALE PHOTOGRAPHIC Supplies. Films, cameras, projectors, enlargers. Write for Free Catalog. Capitol Photo Supplies, 2428 Guadalupe, Austin, Texas.

• • • MOTION PICTURES & SOUND EQUIPMENT

8-16MM SILENT-SOUND Films. Complete rental library. All latest subjects. Free catalogue, (sample film 10c). Garden Film, 317 West 50th, New York 19.

ALMOST FREE—with Blackhawk's big 24-page film bargain catalog—one brand new film (our selection) postpaid: 1-reel, 16mm. silent (300'), $1.98—regular price, $9.75—or 1-reel, 8mm. (150'), 99c—regular price, $5.95. Used 16mm. sound films, $3.98 per reel up; used 16mm. silents, $2.98 per reel; used 8mm., $1.98 per reel. Hundreds of titles normally available. Used Panoram 100' 16mm. musicals, six for $4.99. New 16mm. sound releases, $11.95 per reel; 8mm., $2.98 per reel. New 2"x2" color slides, set of ten, 89c. Used 16mm. sound projectors Ampros, Bell & Howells, Victors—often available low as $129.95. Write today for Blackhawk's free catalog. Blackhawk Films, Inc., 1318 Eastin Bldg., Davenport, Iowa.

5,000 NEW-USED 8-16MM. Silent-Sound Films. International, Dept. MI, 2120 Strauss, Brooklyn, 12.

16MM SOUND Films All Lengths, Sale, Trade. Merts Films, San Bernardino, Calif.

• • • HOME MOVIES

GUARANTEED FRESH 8mm roll, magazine; 16mm roll, magazine movie films. Color, b&w. Free catalog, ESO-S, 47th Holly, Kansas City 2, Mo.

• • • AUTOMOBILES & MIDGET CARS

FREE MOTOR magazines; automobile literature, old, new and foreign; glossy photos, dealer books; service manuals—offered with non-profit organization. Write today; get on free mailing list. Auto Maniacs 2, Stockbridge, Mich.

HI-MILEAGE-SPEED EQUIPMENT from the world's largest supplier. Also dual manifolds, finned heads, electric trunks, doors, lowering sets, chrome panels, thousands of items for all cars. 1953 catalog .25c (illustrated literature free). Wholesale to garages. Newhouse Automotive Industries, Los Angeles 22.

SAVE—CALIFORNIA custom accessories headquarters. Buy direct from original designers. Chrome dash panels, electric push button door-trunk conversions, fender skirts, dual mufflers, lowering kits, speed-dress up equipment. 40 page catalog. Hundreds of photos—25c. Eastern Auto, 3319G South Grand, Los Angeles 7, Calif.

• • • MOTORCYCLES, BICYCLES, MOTOR SCOOTERS

HARLEY-DAVIDSONS—AMERICA'S Best Used Buys! We pay shipping on motorcycles. Genuine new, used, parts, accessories for current and obsolete models. Send 25c for bulletin, catalog. Bill Knuth (Harley-Davidson Factory Dealer) 1753 Muskego, Milwaukee, Wisc.

RECONDITIONED MOTORCYCLES and motors. Chromium accessories. Complete stock Indian parts. Expert rebuilding. Fast Service. Indian Motorcycle Sales, Kansas City 27, Mo.

"BUZZZZ"—THE Motorcycle Magazine. Lots pictures. Worldwide Coverage. $2.00 Year. Sample 20c. 5424-C Sawyer, Chicago 25.

• • • AUTO SUPPLIES & EQUIPMENT

MILEAGE INCREASED by vaporizing gasoline normally entering pistons in liquid form. Guaranteed. $2.00 postpaid. Spraytex Economizer, 6403 Blewett, Van Nuys, Calif.

MOTORISTS, TRUCK Owners, Hot Rod & Sport Car Enthusiasts—Here's what you've been looking for . . . largest and Most Complete Automotive Parts & Accessories Catalog in America. 1953 Edition—132 pages (illustrated) shows all parts, from a cotter pin to a complete motor, and accessories for all makes, all years, all models cars & trucks. Pages and pages for Hot Rod & Sport Car enthusiast. Hollywood Accessories to give your car individual styling. 50,000 items listed at Savings up to 50%. Don't miss it! Send 25c Now (refundable). J. C. Whitney & Co., 1919-EV Archer, Chicago 16.

FOR INCREASED Mileage And Better Performance Replace Present Worn Adjustment Screws With Aero Carburetor Jets, $1.50 Each. (8 cylinder cars use 2.) Write for 10-day free trial. Advanced Automobile, Webster 2, N. Y.

"BUY SPEED equipment without money." No selling. Information free. Newhouse Industries, Los Angeles 22.

MOTORIST SAVE gasoline by Vacu-mating overrich mixtures. Fits all cars. For Free particulars write Vacumatic, Dept. 1999, Wauwatosa, Wisc.

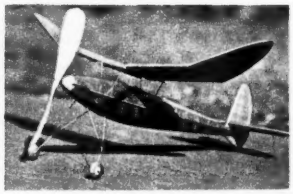
LACHAPELLE'S TREATMENT. (Patented.) For $3.00, makes any gasoline motor better. National International distributor. Ferns Products, 8120-K Walnut Dr., Los Angeles 1, Calif. Write for free data.

TRAFFIC GUIDES Lights For Rear Car Window—Changing red, yellow, green, including instructions $4.95 postpaid. Send 25c for wholesale-retail catalogue. Honest Charley Speed Shop, Box MI-3086, Chattanooga, Tenn.

MORE POWER, Mileage, "Lektronic Spark Intensifier," $2.00. Lowell, R. 10, Box 709, Ferguson 21, Mo.

DEGREE WHEEL to set hi-lift camshaft net $9.95 postpaid. Instructions included. Speed equipment, wholesale and retail catalogue 25c. Honest Charley Speed Shop, Box MI-3086, Chattanooga, Tenn.

SKYHOPPER PLANS



Designed especially for contest work, this 30 in. span Class C AMA rubber powered model is a consistent 2-3 minute performer. Construction cost is less than one dollar. Full size plans contain photos, and complete instructions. Plan No. 363, price 25 cents. Send order and remittance to: Mechanix Illustrated Plans Service, Fawcett Building, Greenwich, Connecticut.

"WATER INJECTION." Free Descriptive, Illustrated, Information. Neher Industries, La Verne, Calif.

WHIZZER MOTOR $8; Whizzer motorbike $21; two passenger midget car chassis $75; homemade midget $18; Indian motor $10. Four airplane tires $3. (mailorder only). Send 25c for Catalogue Number 52 just out listing the above and hundreds of other bargains in new and used motorscooters, midget cars, homebuilders parts, plans, etc. (35c by first class mail.) Midget Motors Directory, Athens, Ohio.

YOU SAVE $$$ Wire Wheel Discs $20.95 Up. Free information. Tennessee Tires And Accessories, LaFollette 1, Tenn.

• • • AUTO TRAILERS

BUILD-IT YOURSELF. Trailers telescoping and regular models. Slip-on coach for pickups. Campers. Free parts catalog. Information, pictures 10c. Comstock Trailers, 585-M Parsons, Kans.

BUILD YOUR Own Trailer! Plans for all kinds. Illustrated Catalog 10c. Jim Dandy, 125-K, Wausau, Wis.

• • • AVIATION

PROPELLERS, PLANS, supplies, for snow sleighs, air boats. Catalog 25c. Banks-Maxwell, Box 3301D, Ft. Worth, Texas.

SURPLUS CLOSEOUT! Generators, AAF 28V, 200A., $10.95. Electric motor, 110VAC, ½hp, Delco, new, shelfworn, $9.95. 100,000BTU remair AAF heater, blower, gasoline motor attached, portable, good used, $59.50. FOB. Aero Parts, 8102 Lockheed, Houston 17, Texas.

BULLET RACEPLANE. Homebuilt monoplane. Blueprints $2.00. Corbcraft, 81-M Elmerston, Rochester 20, N. Y.

• • • ELECTRICITY & ELECTRICAL SUPPLIES

FREE—SURPLUS Catalog—Welders, Motors, Generators, Hydraulics, Assembly Kits. Save Bargains Galore. LeJay Company, Minneapolis 8, Minn., or, Seattle 4, Wash.

LAMPS—25c BRINGS bargain parts catalog containing instructions for electrifying oil lamps, vases, etc. Gyro Lamps, 5402M Clark, Chicago 40.

ELECTRIC PENCIL: Engraves all Metals, $1.50. Beyer Mfg., 10511-G Springfield, Chicago 43.

• • • MACHINERY, TOOLS & SUPPLIES

10" BANDSAWS—SPECIAL $29.99! Investigate. Free literature. Amerco, 3026 Thomas, Minneapolis 11, Minn.

FREE NEWS. Read, see, amazing new low cost Swiss Patent wire-stripper. No obligation, postcard. Steen's, 884 Long Branch, N. J.

• • • INVENTIONS WANTED

INVENTIONS WANTED. Patented; unpatented. Tremendous manufacturers lists. Global Marketing Service, 1404 Mitchell, Oakland 1, Calif.

INVENTORS: HUNDREDS of manufacturers have requested our assistance in locating marketable new products. Complete information, free. Institute of American Inventors, Dept. 50-C, 631 E Street N. W., Washington 8, D. C.

INVENTIONS WANTED: Patented or Patent Pending. 21 years' experience Promoting Inventions. National Service Bureau, 3126 Meramec, St. Louis 18, Mo.

CASH BUYERS for ideas and inventions. Write National Inventors Institute, 4097 East 131st St., Cleveland 5, Ohio.

• • • FOR INVENTORS

INVENTORS—IF you believe that you have an invention, you should find out how to protect it. The firm of McMorrow, Berman & Davidson is qualified to take the necessary steps for you. Send for copy of our Patent Booklet "How to Protect Your Invention" and "Invention Record" form. No obligation. McMorrow, Berman & Davidson, Registered Patent Attorneys, 138-Z Victor Building, Washington 1, D. C.

INVENTORS: HERE'S The Answer. Write: Designers, 5909 E. Central, Wichita 15, Kans.

INVENTIONS PROMOTED. Patented or Unpatented. Established 1911. Write Adam Fisher Company, 582 Enright, St. Louis, Mo.

INVENTORS: NEED Help? Write Institute of American Inventors. Dept. 50T, 631 E St. N. W., Washington 4, D. C.

INVENTORS—SEND for free patent information book and inventor's record. Registered Patent Attorney Associate Examiner, Patent Office 1922-29; Patent Attorney & Advisor, Navy Department 1930-47. Gustave Miller, 43M11 Warner Building, Washington 4, D. C.

INVENTORS. FOR "INVENTION RECORD" form, contact Carl Miller, Registered Patent Attorney, Woolworth Building, New York.

INVENTORS—THIS firm is registered to practice before the United States Patent Office and is available to assist you in the preparation and prosecution of your patent application. "Patent Protection for inventors" booklet containing detailed information and steps to take toward patent protection will be sent upon request. No obligation. Victor J. Evans & Co., 870-D Merlin Building, Washington 6, D. C.

CASH FOR your idea, 280 manufacturers need inventions, patented or unpatented. List free. Invention Bureau, 208-X Clinton, Oak Park, Ill.

THE "INVENTOR'S Guide" book tells you How to Develop, Protect, Make Money from Gadgets, Patents. List of needed products. Send only $1.00. Inventors Creative Service, 354 South Spring Street, Los Angeles 13, Calif.

CLASSIFIED ADVERTISEMENTS

"INVENTOR'S GUIDE" free. Frank M. Ledermann, Registered Patent Attorney, 154 Nassau Street, New York.

SEARCHES—PUT your patent searches in the hands of a Registered Patent Attorney or Agent, as he qualifies to give a worth-while patentability report. Record of Invention form upon request and information on patent protection. Patrick D. Beavers, Registered Patent Attorney, 925 Columbian Building, Washington 1, D. C.

PATENT PENDING. No attorney required! 21-page Instruction Book sent on approval. Paladin Publications, 622-C Sheraton Bldg., Washington 5, D. C.

INVENTORS: LEARN how to protect your invention. Unless the inventor is familiar with patent matters, he should engage a competent registered patent attorney or agent to represent him. We are registered to practice before the U. S. Patent Office and prepared to serve you in handling your patent matters. "Patent Guide for the Inventor" containing detailed information concerning patent protection and procedure with "Record of Invention" form will be forwarded to you upon request—without obligation. Clarence A. O'Brien & Harvey Jacobson, Registered Patent Attorneys, 33A-D District National Building, Washington, D. C.

• • • PATENTS

INVENTIONS PROMOTED. Patented or Unpatented. Established 1911. Write Adam Fisher Company, 582 Enright, St. Louis, Mo.

OBTAIN PATENTS Yourself. Eliminate attorneys' fees. Information $2.00. Satisfaction or money refunded. Davidson, 5645 11th Ave. N. E., Seattle 5, Wash.

• • • PATENT ATTORNEYS

INVENTORS: LEARN how to protect your invention. Unless the inventor is familiar with patent matters, he should engage a competent registered patent attorney or agent to represent him. We are registered to practice before the U. S. Patent Office and prepared to serve you in handling your patent matters. "Patent Guide for the Inventor" containing detailed information concerning patent protection and procedure with "Record of Invention" form will be forwarded to you upon request—without obligation. Clarence A. O'Brien & Harvey Jacobson, Registered Patent Attorneys, 338-D District National Building, Washington, D. C.

INVENTORS: WHEN you are satisfied that you have invented something of value write me, without obligation, for information as to what steps you should take to secure a Patent. Write Patrick D. Beavers, Registered Patent Atty., 924 Columbian Bldg., Washington 1, D. C.

C. A. SNOW & CO., 1-427 Snow Bldg., Washington 1, D. C. Registered patent attorneys. Literature mailed on request.

INVENTORS—IF you believe that you have an invention, you should find out how to protect it. The firm of McMorrow, Berman & Davidson is qualified to take the necessary steps for you. Send for copy of our Patent Booklet "How to Protect Your Invention" and "Invention Record" form. No obligation. McMorrow, Berman & Davidson, Registered Patent Attorneys, 1381 Victor Building, Washington 1, D. C.

INVENTORS. FOR "INVENTION RECORD" form, contact Carl Miller, Registered Patent Attorney, Woolworth Building, New York.

INVENTORS: INFORMATION on patent procedure furnished on request, without obligation. John Randolph, Registered Patent Attorney, 210 Columbian Building, Washington 1, D. C.

"INVENTOR'S GUIDE" free. Frank M. Ledermann, Registered Patent Attorney, 154 Nassau Street, New York.

• • • BUILD IT YOURSELF

BUILD CUSTOM Luggage And Cases. Work at home spare or full time. Earn $10-$15 hour. No experience, no special tools needed. Make cases for tools, instruments, cameras, jewelry, salesmen's samples, etc. Learn at our risk. Free literature. Abarsi Casecraft, Dept. MI-4, 805 Sunset Blvd., Los Angeles 12, Calif.

BUILD YOUR Own "Tractor." Free information. Eltraco, D-9, Camptonville, Calif.

BUILD INEXPENSIVE concrete block-maker. Motor-Hand. Write. Clyde Lee, Mountain View 9, Okla.

"CONCRETE BLOCK Homes." 32 page booklet on how to build, $1.00. H. C. Lightfoot, Civil Engineer, Richboro 25, Penna.

• • • HAND MADE NOVELTIES

SELL YOUR Handicraft Profitably. New method tells how. Details free. Thompson, Loganville MI, Wisc.

• • • HOME CRAFTSMEN

TOOL-SAVER. SALVAGE Rusty Tools. Kit to remove rust and rustproof favorite tools. $2.00 postpaid. Nova Products, Inc., Box 6837MI, Kansas City, Mo.

35MM ENLARGER

An MI project of especial interest to the minifan. This particular enlarger was built around a Leica though any other miniature can be used just as well. The drawings show very plainly all the parts needed to make this versatile little job. It features an arrangement that permits the film to be advanced without any chance of your favorite negatives being scratched as the condenser is lifted out of the way to advance the film. When lowered, the weight of the condenser serves to keep the film perfectly flat and in the focal plane. Blueprints and descriptive text are available from the MI Reader Plans Service, Fawcett Building, Greenwich, Conn., for 50c. Ask for Plan No. P-4.

16 NEW LAWN chairs, 22 picnic tables, benches, trellises, etc. All 38 plans with necessary full size patterns. $1.00. Mastercraft 43X, 7041 Olcott, Chicago 31, Ill.

LOOKING FOR A New Craft? Personalize, decorate glassware. Etch designs and monograms easily and safely in 3 minutes with Etchall. Send $1.00 for trial kit. Free Folder. Etchall, Inc., Columbia 35, Mo.

OUR BIGGEST Leather and Craft Catalog yet! 1000's of items. Send 25c (refunded with 1st order). Russo Handicraft Supplies, Dept. 16X, 245 S. Spring, Los Angeles, Calif.

"PRACTICAL PAINTING, Wood Finishing" shows how to get professional results. Furniture finishing, workshop projects, home decorating. Complete Modern brush and spray methods. Tricks you've never seen. Write Home Craftsman, 115-F Worth St., N. Y. 13.

LEATHERCRAFT FOR Pleasure Or Profit. Make easy-to-assemble purses, belts, gloves, woolskin toys, 100 other items for gifts or to sell. Send 10c today for big catalog. Largest Leathercraft stock in U. S. J. C. Larson Co., 820 S. Tripp, Dept. 2952B, Chicago 24.

PLASTICS HOME-CRAFT Course For Men And Women. Tells and shows how to make hundreds of fast selling plastics products. All plastics and materials for 23 projects included in course. No special tools needed. Course pays for itself. Write for Free booklet. Interstate Training Service, Dept. 4D, Portland 13, Ore.

LEATHERCRAFT, COPPER Tooling, Textile Painting, Beadcraft, Shellcraft. Many other crafts. Big Free catalog shows everything you need. Kit Kraft, 7373 Melrose, Hollywood 46, Calif.

89 FULL SIZE Jig Saw patterns of beautiful shelves, ornaments, toys, novelties. Plus "How, Where to Sell." Only $1.00. Mastercraft 44X, 7041 Olcott, Chicago 31, Ill.

100 FULL SIZE jig saw patterns up to 20" high, only $1.00. Pattern Service, Medway 11, Mass.

LAMP SIZE Cypress Knee $1.00. Cy Products, Ella Street, Lafayette, La.

PADHACKSAW REVOLUTIONARY saw combining best features of Padsaw and hacksaw. Semi-automatic. Performs jobs normally done by 6 different tools. Makes cuts of unlimited length and design. $3.95. National Sales Service, Monroe, Wisc.

93 "ORIGINAL IDEA" Jig Saw Patterns, $1.00. Professional drawing, quality printing. Full size shelves, toys, lawn ornaments, novelties. Walker Studio MI-4, 4343 Lindell, St. Louis 8, Mo.

28 LAWN ORNAMENT patterns 25c. Other patterns: 15"-20" high; Dutch girl; Dutch boy, pirate, bull terrier, Mexican girl, Mexican boy, dwarf, penguin, flower girl, 15c each; 3 for 40c. 25 novelty patterns 30c. All 62 full size patterns $1.00. Strother, Dept. OC, Belington, W. Va.

JIGSAW OWNERS Attention! Start earning money at home cutting out wooden novelties and souvenirs. Write H. Cook, Dept. B, 4407 S. Normal Ave., Chicago 9, Ill.

HOBBYISTS HOMEMAKERS & Handymen. Send for Free Illustrated Catalog. Highbridge Co., 2450 Walton Ave., New York 68, N. Y.

VELCOAT MAKES any surface feel velvety. 18 exciting colors. Easily sprayed on. Single color $1; 6-color kit $4.95. Velcoated sample free. Velcoat, Box 5172-D, Tulsa 16, Okla.

90 ALL NEW, full size lawn ornament and novelty patterns, up to 20" high. Only $1.00. Mastercraft 42X, 7041 Olcott, Chicago 31, Ill.

• • • MODELS & MODEL SUPPLIES

BUILD MINIATURE homes with our accurately-scaled materials. Send 25c for booklet and samples. Architectural Model Materials, Inc., Dept. J-43, 4208 Armitage Avenue, Chicago 39.

FAMOUS CATALOGS: Ships, Fittings, 169 pages 50c; Worlds Tinplate Trains, 148 pages 50c; HO Trains, 140 pages 50c. Each includes 50c refund coupon. Collectors Soldiers 25c. Polk's, 314 5th Ave., New York 1.

BALSA WOOD: Model supplies. Free lists. Sig Manufacturing Co., Montezuma, Iowa.

SEE MICROMODELS In January 1953 *Mechanix Illustrated*. List and 10 construction models $1.00. Jenid Imports, Box 558, Loring Station, Minneapolis 3, Minn.

SHIP AND Yacht Model Fittings. Send 25c for 40 page illustrated catalog. A. J. Fisher, 1002-B Etowah Ave., Royal Oak, Mich.

• • • PLASTICS

PLASTICS HOME-CRAFT Course For Men And Women. Tells and shows how to make hundreds of fast selling plastics products. All plastics and materials for 23 projects included in course. No special tools needed. Course pays for itself. Write for Free booklet. Interstate Training Service, Dept. 4D, Portland 13, Ore.

LUCITE, PLEXIGLAS. Any size sheets, masked. Square foot (12 x 12) cost, 1/16", $1.09; 1/8", $1.40; 3/16", $1.75; 1/4", $2.08. Include 10% postage. Almac Plastics, 600 Broadway, New York City.

PLASTIC, SHEETS, rods, tubes, etc. Free list. Plastic Supply Co., 2901 N. Grand Blvd., St. Louis 7, Mo.

LEARN PLASTICS At Home. Small cost. Spare Time. Dime Brings Sample Plastic, Three Experiments, Full Details. Plastic Projects, Box 5151, Detroit 35, Mich.

NEW LIQUID Casting Plastic. Clear, colors. Embed flowers, insects, coins. Saw, drill, carve. Send 25c for Castolite Creations Manual and proved Success Plan showing how to make money at home. Castolite, Dept. D-104, Woodstock, Ill.

• • • FOR SPORTSMEN

BOWS AND Arrows! Raw Materials. Send 5c for catalog. Illustrated Handbook "How to Make and Shoot Archery Tackle"—75c. Stemmler Co., Dept. 2, Manorville, L. I., N. Y.

• • • SPORTING GOODS

5000 BARGAINS, FIREARMS, Binoculars. War Relics. Catalog 50c. Smith Armory, Runnemede, N. J.

SEND 10c FOR lists either shotguns, rifles, handguns, ammunition or send 25c for all lists. Frayseth's, Willmar, Minn.

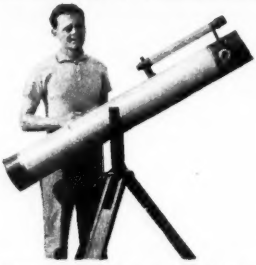
SAVE! 1953 GOLF Equipment Catalog 25c. Pro-Golf Shop, Waseca, Minn.

SHOTGUNS, RIFLES, revolvers, over 500 modern, obsolete, list 10c coin. Ed Howe, 28 Main, Coopers Mills, Maine

• • • BINOCULARS, TELESCOPES, MICROSCOPES

TRIPOD PLANS. Unless you have a sturdy support for your telescope it will be virtually useless for good observing. For best results build MI's "Quarter-Ton" Tripod. Send 75c for plans and instructions to MI Reader Plan Service, Fawcett Place, Greenwich, Conn. Please ask for Plan No. P-7.

REFLECTING TELESCOPE



Plans are available for building a superb astronomical instrument that will reveal the moons of Jupiter, the rings of Saturn, and the craters in the Moon. With it, you can read a newspaper headline at a mile. The complete plans include photographs, drawings, and detailed instructions. Send remittance of $2.00 to MI Reader Plan Service, 10 Fawcett Place, Greenwich, Conn. Please ask for Plan P-6.

TELESCOPE PLANS are available for building MI's Six-Inch Portable Reflecting Telescope. A superb astronomical instrument that will reveal the moons of Jupiter, the rings of Saturn and the polar caps of Mars. With it, you can read a newspaper headline at a mile. The plans are complete with photographs, drawings and detailed text. If you can fix a leaking faucet, you can build this telescope. Send your request and remittance of $2.00 to MI Reader Plan Service, 10 Fawcett Place, Greenwich, Conn. Please ask for Plan P-6.

POWERFUL, GIANT Telescopes Easily Made. Lenses, erector, focusing tube and instructions for making 40X, 100X, 200X and 400X telescope $6.00. Telescopic Company, Manorville 7, N. Y.

"FREE" CATALOGUE! Thousand war surplus optical bargains. Lenses, Prisms, Telescopes, Binoculars, etc. Send $1.00 for 10 lens Hobbyist Set and Project booklet. R. Jaegers, 691 West Merrick Road, Lynbrook, N. Y.

REFLECTING TELESCOPES, 60X completely assembled $29.75. Guaranteed observatory clearness. Free information. Skyscope, 475 Fifth Avenue, New York 17.

WAR SURPLUS Bargains, Binoculars, Telescopes, Sextants, Millions of Lenses, Prisms, Reticles, Eyepieces, Objectives, etc. Mail 10c for Big "Catalog CB." Send $1.00 for Stock CB—10-piece Lens Kit and Big Instruction Booklet. Edmund Scientific Corp., Barrington, N. J.

FREE GIANT Optical Catalog—New-Illustrated. Nassau Optical, 9 W. Greenwich Ave., Roosevelt, L. I.

POWERFUL ASTRONOMICAL telescopes easily made. Full power clear vision guaranteed. Complete instructions and lenses for making erector, 45X, 100X, 200X and 400X telescope $4.00. Suffolk Science Service, Riverhead, N. Y.

REFLECTOR TELESCOPE Kits—Precision eyepieces, Mirror cells, Diagonal holders, Tubing, Other optical bargains. Free illustrated bulletins. Esco Products, 1426 Willow Ave., Hoboken, N. J., formerly at 911 Willow Avenue.

TELESCOPE KITS—Lenses, prisms, eyepieces. Mirrors aluminized, corrected and ground to order. Free catalog. Instructions 10c. Garth Optical, 130 Garth Rd., Scarsdale, N. Y.

FREE 1953 40-PAGE, 3 color catalog! 67 different models! United Binoculars, 9043 S. Western, Dept. A-1173, Chicago 20.

ASTRONOMICAL TELESCOPES Produce Inverted Images. Our giant 100 power, complete, ready to use terrestrial telescope with hardwood tripod, produces tremendous, clear, erect images day and night. Helioscope. Extra eyepiece. All for $12.00 fob factory. Telescopic Company, Manorville 7, N. Y.

BINOCULARS, TELESCOPES, Microscopes, Terrific Values $3.95 up. Request Free, money saving catalog. Criterion, Hartford, Conn., Dept. M6.

• • • BOATS, OUTBOARD MOTORS

NEW, USED, rebuilt marine motors. Marine conversions, fittings. FREE catalog. Stokes Marine Supply, Dept. 21, Coldwater, Mich.

MARINE CONVERSIONS for Ford and Jeep engines. Catalog 10c. Lehman Manufacturing Company, 972C Broad Street, Newark 2, N. J.

GET OUR Big 224 Page 1953 Marine Hardware, Boat Kit & Equipment Catalog. Send $1.00 For Handling Costs Refunded With First Order. Garland Frasher Marine Sales, 540-G 31st Street, Huntington, W. Va.

FULL SIZE cut to shape patterns, blueprints, $3.75 up. Pleasure boats, to 38 feet. Illustrated "Build a Boat" catalog, 25c. "How to Build Boats" book $1.00. Polywog Houseboat Plans, $10. Marine Catalog $1.00. Cleveland Boat Blueprint Co., Dept. A-23, Cleveland 13, Ohio.

WE MANUFACTURE the most complete line of inboard speedboat hardware for all racing classes. Big illustrated catalog 25c. Debbold Marine Supply, Lynwood 6, Calif.

CONVERT FORD and Jeep engines to 100% marine with Osco's world famous Convo-kits. Deluxe catalogue 25c: Oscomotors, 3627D Lawrence St., Philadelphia 40, Penna.

MARINE CONVERSION parts, most complete line on market. Water cooled exhaust manifolds, water pumps, transmissions converted, marine reverse gears, etc. Barr Marine Products, 2708 E. Castor Avenue, Philadelphia 34, Penna.

NOW FASTER Than Ever! Champion Boats—the choice of champions now available to you! Easy-to-read plans; easy-to-assemble kits; or easy-to-afford custom built speed boats. (18 models, outboard and inboard). Send 25c today for multi-colored, illustrated catalogue. Champion Boats, 1524 W. 15th St., Long Beach, Calif. Dept. 21-D.

WANT A Boat? Build it yourself! Write for descriptive folder 55 easy-to-build boats. Science and Mechanics Magazine, 966 Dunham Bldg., Chicago 11, Ill.

PLANS: INBOARD-OUTBOARD runabouts, cruisers, sail. Wood, plywood, welded steel. Advise requirements. John B. Clark, N. A., 329 Kenmore, Bay Village, Ohio.

BARGAINS GALORE Boat Steerers, Windshields, hundreds items hardware and boat kits, skis, lowest prices. Folder. Marine, Box 681, Mendota, Minn.

• • • BODY BUILDING—ATHLETIC EQUIPMENT

"POLICE, JIU Jitsu," "Scientific Boxing," "Police Wrestling." 3 books complete, $1.00 postpaid. Satisfaction or money back. Knickerbocker Books, Box 377-X, Midtown Sta., New York 18.

BARBELLS, EXERCISE equipment. Courses. Free booklet. Good Barbell Co., Reading, Penna.

CLASSIFIED ADVERTISEMENTS

• • • REAL ESTATE, FARM LANDS

FLORIDA HIGHWAY Estates—$395. Payable $15 monthly. Big, beautifully wooded Tracts on U. S. Highway 231. In famous Panama City Pleasure Resort Area. World's finest beaches. Many lovely lakes. Wonderful fishing, hunting. Grow fruits, berries, vegetables, flowers, Poultry. Cheap electricity. Fine investment in desirable new Community. Free Booklet. Morton Wood, Box 873, Houston, Texas.

• • • HORSE TRAINING

"HOW TO Break And Train Horses"—A book every farmer and horseman should have. It is free; no obligation. Simply address Beery School of Horsemanship, Dept. 1154-C, Pleasant Hill, Ohio.

• • • RABBITS—HAMSTERS

A PRACTICAL Beginning To Successful Rabbit Raising. 48 Page Illustrated Booklet. Dime. American Rabbit Breeders Association, 55 AR&CBA Bldg., Pittsburgh, Penna.

MAKE BIG Money! Raise Chinchilla Rabbits. Cash Markets Supplied. Write Today! Rockhill Ranch, Sellersville 48, Penna.

RAISE HIGHLY-PROFITABLE Angora and New Zealand rabbits. Particulars free. White's Rabbitry, Newark, Ohio.

STEADY EARNINGS With Angora Rabbits. Free illustrated booklet tells how, lists markets, successful raisers. Angoraville, 170 E. Butler, West St. Paul, Minn.

GUINEA PIGS. Highly profitable. Free booklet. Taylors, B426E, Hapeville, Ga.

• • • PETS FOR SALE

YOUNG PARROTS—Make fine talkers. Herb Miller, 1911-N, Lubbock, Texas.

• • • JEWELRY

5000 JEWELRY STYLES, you can easily make yourself—Pins, Earrings, Bracelets, Rings, Matched Ensembles. Instructions and Catalog—10c. Barrys, 139 Ardsley Court, Newark, N. J.

JEWELRY MAKING can be a profitable Hobby. Send 20c for our latest illustrated catalog. Milady-Fair Co., G. P. O. Box 1328, N. Y. C. 1.

RHINESTONES, JEWELRY settings, cameos, sequins, beads. Send 10c for Illustrated Catalog. J. & M. Novelties, Dept. CD-5, Griffith, Ind.

FREE! PRICE List of Novelty Jewelry Findings. Lowest prices. Angelo Calamia, 143 Engert Ave., Brooklyn 22, N. Y.

• • • PERSONAL

FREE CATALOG of clothing for Big Men —Waist 46-66; neck 17-22. Burns-Martin, Dept. 434; 147 Summer St., Boston 10, Mass.

"HOW CAN I Find Out?" You can! Information discreetly developed. Any matter, person, problem, anywhere. Worldwide. Officially licensed, bonded service. Established 1922. Reasonable. Confidential. William Herman, 170 Broadway, New York.

"INTERESTING MAILS"—25c keeps your mail box full three months. Bentz, Jr., Desk 1/10, Chatawa, Miss.

ECONOMICAL HONEYMOONS are yours to enjoy. Save time and money in the long run by sending 25c now—stamps or coin—for complete information. Address Economical Honeymoons, High Point, Dept. MI, Mt. Pocono, Penna.

YOU PROFIT Because Others Forget. Plan, $1. We sell nothing else. P-L, Box 195, Natrona, Penna.

SEND HANDWRITING plus $2.00 for sincere interpretation. Satisfaction assured. Shonbek, P. O. Box 989, San Francisco 1, Calif.

MEXICAN LAW. General Practice Attorney, 1203 Arizona St., El Paso, Texas.

YOUR LEATHER Jacket Renovated expertly. Free circular. Berlew Mfg. Co., Dept. 13, Freeport, N. Y.

CHICAGO AREA: Local Information. Also any service, business or personal. Harmon, Box 5902, Chicago 80, Ill.

• • • REMAIL SERVICE

WASHINGTON, D. C. Remail Single 25c. Schecter's, 926 6th St. S.W., Washington 24, D. C.

SURPRISE FRIENDS! Have your letters postmarked from the big state Texas 25c. The Gables, 1184 College, Beaumont, Texas. Use same address for forwarding answer 25c extra.

BALTIMORE OR Washington Remail 25c. R. Shingleton, 1207 Evesham Ave., Baltimore 12, Md.

LETTERS REMAILED 25c. "Mail Me From St. Louis," Box 510, St. Louis 3, Mo.

ALASKA REMAIL Service—25c each. J. E. Maley, Box 1404, Anchorage, Alaska.

LETTERS REMAILED 25c Private. Jos. Manger, 160 Irving Ave., Brooklyn 37, N. Y.

NEW YORK Postmark 25c. Maxwell, Box 1432-M, GPO, New York 1.

CANADA REMAIL. 25c (coin) 800 Belanger, East Montreal, P. Q. Can.

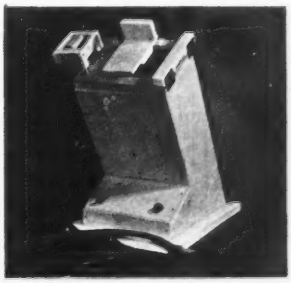
• • • TOBACCO, PIPES

THE WORLD'S Finest Pipe Tobacco. $2.25 for 14 ounces. Harkniss Pipe Shop, 101 West Commerce, San Antonio, Texas.

• • • MINERALS, PRECIOUS STONES

"GENUINE" RED Arizona Rubies (Garnets). Send quarter for packet. Bitner's, Box 1025, Scottsdale, Ariz.

JIFFY SLIDE PRINTER



This miniature positive printer will enable you to print your 35mm or Bantam negatives as positives for nearly lifesize projection. It is made of plywood and the construction is unusually easy to follow; can be built at a cost of less than $2.50. Blueprints and text are available from MI Reader Plan Service, Fawcett Bldg., Greenwich, Conn., for $1.00. Ask for Plan No. P-5.

QUARTZ, JASPER, Agate, and Catalog 25c. Gemco, Elkhart Lake 1, Wisconsin.

ROCK HOUNDS—Your choice of Minnesota's Iron Range specimans. Write for full particulars. Kellys, 2832L-5th Ave., West Hibbing, Minn.

• • • MISCELLANEOUS

BIG MAILS Magazines, Plans, Opportunities 3 months 25c. N. Provence, 3708 West Lexington St., Chicago 24, Ill.

OUTDOOR TOILETS, Cesspools, Septic Tanks cleaned, deodorized with amazing new product. Safe, easy, economical to use. Double waste digesting action. Saves digging, pumping. Satisfaction guaranteed by 150,000 customers. Postcard brings Free Sample. Burson Laboratories, Dept. O-52, Chicago 22, Ill.

REAL INSIDE Secrets. Wholesale sources, tips, plans, ideas. Write now. "Revealer," Box 37M, New York 53, N. Y.

CESSPOOLS, SEPTIC tanks, outhouses cleaned, deodorized by new scientific formula. Saves annual pumping and risk of health hazards. Postal brings literature and guaranteed testimonial letter. Electric Sewer Cleaning Co., Allston 34, Mass.

KENTUCKY LAKE Information, Dam Area, fisherman's paradise. Rates for cabins, boats, etc. Tips. Send $1.00. Old Timer, 1024 Yarbro Lane, Paducah, Ky.

INCREDIBLE! BECOME Mental Superman Overnight! Floor everybody! Free Literature! Bijou, Box 1727-LW, Hollywood 28, Calif.

RECEIVE BIG Mails, Catalogs, Samples, Offers, etc., De-Luxe Listing, Year 25c. States Company, Dundee, 27-MI, Mich.

MEN ONLY! Free Sample. America's "slickest" shave. Kenmore Distributors, 3819-MI Kenmore, Chicago 13.

FREE GOLD Panning Lesson, Catalogue, Mining Books, Supplies, Maps—"Where To Go"—Old Prospector, Bx 729D3, Lodi, Calif.

• • • OLD GOLD WANTED

HIGHEST CASH Paid For Old, Broken Jewelry, Gold Teeth, Watches, Silverware, Diamonds, Spectacles, Platinum. Free Information. Satisfaction Guaranteed. Rose Smelting Company, 29-K East Madison, Chicago.

• • • WATCHES, WATCHMAKING

EXPANSION WATCHBANDS, Imported. For Resale Only. All sizes and qualities. Sample $1, free catalog. Transworld, 565-5th Ave., New York.

WATCHMAKERS'-JEWELERS' COMPLETE informative catalogue 20c. Bengall Company, Culver City, Calif.

WATCH AND clock repairing books for hobbyists. Free information. North American. Dept. 53-D, 2320 Milwaukee, Chicago 47, Ill.

5 ELGIN, WALTHAM, Illinois, Hampden Gents' Wristwatches needing minor repairs, $18.00. Write for prices. B. Lowe, Holland Bldg., St. Louis 1, Mo.

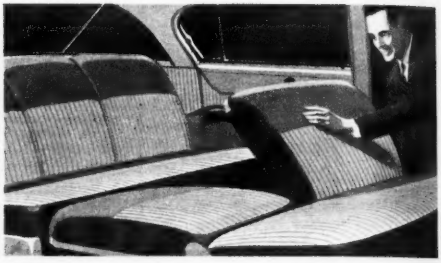
SWISS WATCHES from importer for resale only. $3.30 up. Catalog. Transworld, 565 5th Ave., New York City.

WATCHMAKERS' JOURNAL contains instructive articles on watch repairing. Sample copy 20c. Watchmakers' Journal, Box 3218, Daytona Beach, Fla.

Do You Know?

How Nash Airliner Reclining Seats Turn into Twin Beds in 30 Seconds?

1 At lever touch either front seat back adjusts to any of five comfortable positions. Right-hand seat, fully reclined, makes a wonderful "couch" for children's or passenger's naps.



2 No longer need the driver sit rigidly in one position. Just touch a lever and change the angle of the seat back. Tall men say it's the greatest idea yet for comfort on long drives.

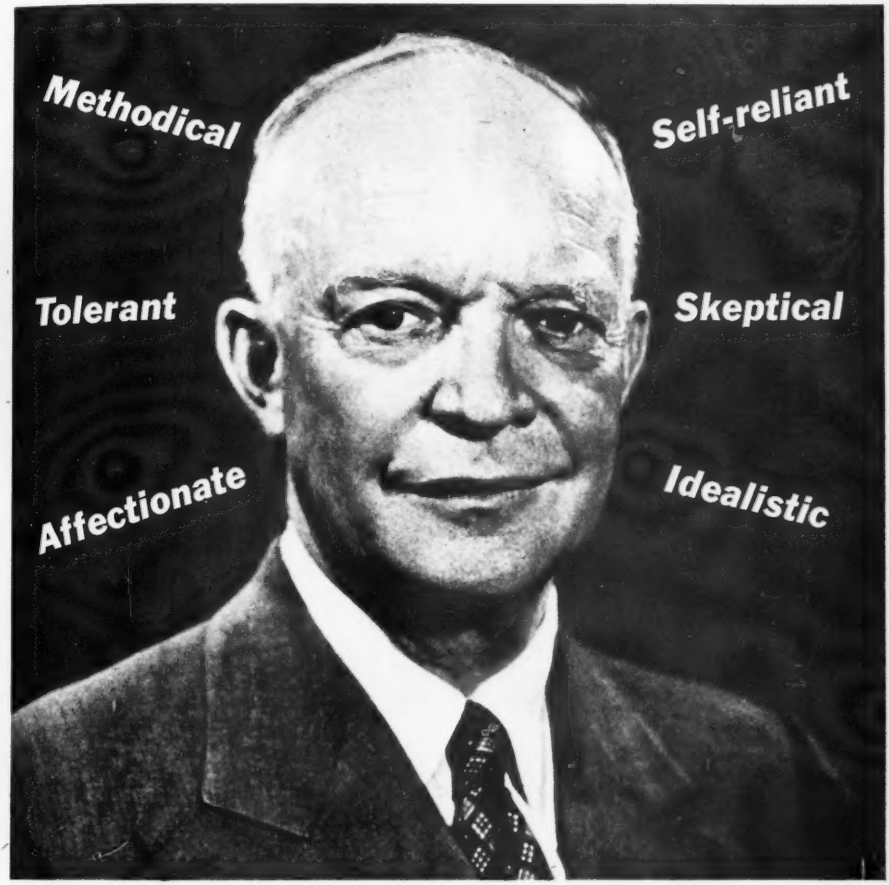
3 All the comforts of home! Your Nash dealer offers easy-to-inflate air mattresses and special window screens at small cost—providing a wonderful home on the road for you.

4 Twin Beds in 30 seconds! Both front seat backs recline to fill space between front and rear seats, creating roomy Twin Beds for hunters, fishermen—everyone who travels.

Reclining Seats and Twin Beds are just two of the scores of exclusive Nash features available. See and drive the new 1953 Airflytes, styled by Pinin Farina, at your Nash dealer's. Take the key and see—"there's none so new as Nash for 1953."

Nash Motors, Division Nash-Kelvinator Corporation, Detroit, Mich.

IKE EISENHOWER, says Whiteside, has traits more evenly balanced than Truman, Stevenson. He has a firm temperament, is authoritative, courageous.



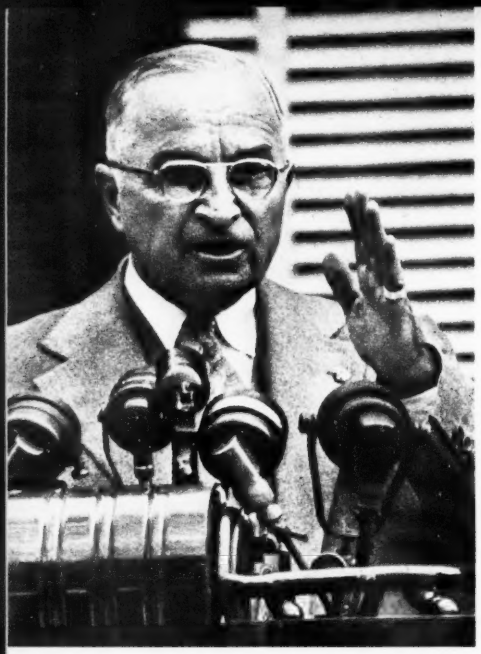
Personology—Science of Success

Bob Whiteside, Personologist, is startling the scientific world with an amazing new system for determining a person's aptitudes by his physical appearance.

By Lee Edson

THE man and woman standing in front of the studio audience at a recent San Francisco radio show were plainly skeptical. And so was the audience itself.

They stared at ex-newspaperman Bob Whiteside with a show-me attitude that for a lesser person might have been disconcerting. But Whiteside, who was on the program to demonstrate what he could reveal about a person merely by looking at him, was used to skepticism. He looked his subjects over carefully. He had never seen



HARRY TRUMAN is self-reliant, wants to make all decisions. He is terse, abrupt (thin lips), affable (closeness of eyebrows to eyes), capricious, has ability to understand complex problems (large proportion of fore part of brain), won't stay retired.

Adlai Stevenson is idealistic, not a show-off (position of ears), more intelligent than Eisenhower, Nixon, or Truman, conserving (round forehead), very sensitive, intolerant (eye spacing), has less ego, self-confidence than above men.

them before and there was little about them that could distinguish them from thousands of others.

"You, sir," said Whiteside calmly, "should work at directing people. You'd do it well even though you might be abrupt with your associates." He paused. "You're probably bothered more by little things than by major emergencies."

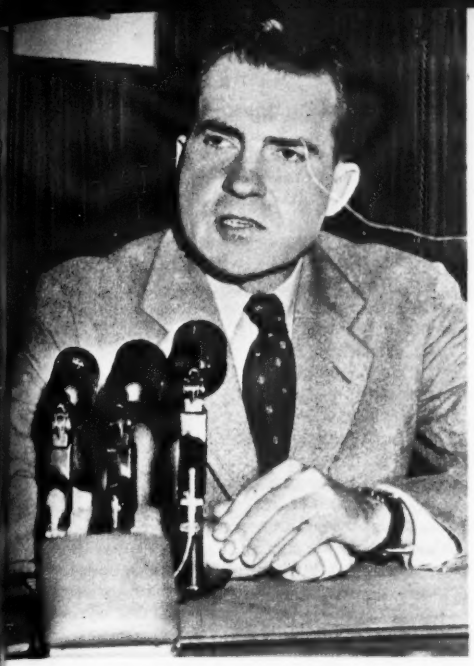
Whiteside turned to the young lady. "And you have emotional capacities that should make you a fine actress."

The conductor of the program laughed. Whiteside had called the shots. The man was David Diamond, a Hollywood movie producer, and the young lady was Margaret Field, an actress. Mr. Diamond, much impressed, later wrote that Whiteside's analysis was amazingly correct.

Hocus pocus? A lucky guess? Or a remarkable new science of prediction?

Bob Whiteside, an alert vigorous man of 44, has no doubt of the answer. As head of the Personology Foundation of San Francisco he has been studying human beings for the past six years and he has found some amazing correlations between personality and physical characteristics that have enabled him to make startling analyses. Some years ago, for instance, he was invited to test a group of convicts at San Quentin Prison. One man, who was serving a five-year-to-life term for armed robbery, interested him. He analyzed the fellow as being a frustrated poet and told him he should write poetry. The convict laughed and went back to his cell. But a year later Bob Whiteside received a privately-printed book of poems written by the con. Not only that but the prisoner said that writing poetry had given him a new lease on life and currently, having completed his parole, he was making good as a salesman.

In another instance Whiteside was called in to examine a teen-ager who had assaulted the principal of his school. The boy was surly and defiant and none of the medicos or psychologists could do anything with him. The San Francisco Personology Foundation head noted the boy's physical pattern which indicated a big ego and a dominant personality and he pointed out how the boy could use these traits positively. After an hour's discussion the lad apologized to the school head and promised he would straighten out in the future. The judge was so impressed with the boy's change of attitude that he stated in court that "more scientific approaches to young-



RICHARD NIXON is more affable than Truman, stubborn (V-shaped chin), generous, dramatic (arched eyebrows), willing to help (swoop of nose), has a big ego (width of forehead), poor sense of the commercial (recessed ears), good mental capacity.

Rate Your Friends Personologically

Personality Trait	Definition	Physical Characteristic
Affectionateness .	Deep feelings of emotion	Large iris of eye; little white showing
Melancholy . . .	Under prolonged strain	Considerable white under iris of eye
Impetuousness . .	Quick in speech	Full protruding lips
Conciseness . . .	Puts things in a few words	Light thin lips
Criticalness . . .	Quick to notice flaws	Outward corner of eye slants down lower than inner corner
Self-reliance . . .	Confidence in one's own abilities	Spread of wings of nose
Tolerance	Easy adjustment to new ideas. Lack of tolerance is shown by those who get burned up very quickly	Space between eyes vs. size of eye aperture (Greater the spacing, higher the tolerance.)
Ego Balance . . .	Need for limelight	Further the ears sit back of head, the greater the need
Exactingness . . .	Fussiness over details	Lines over bridge of nose
Adventurousness .	Love of travel and new experiences	High cheek bones

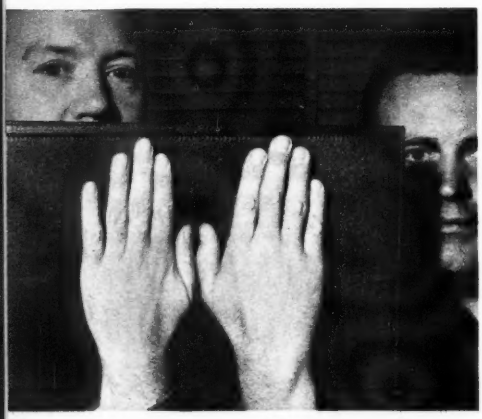
sters would result in more satisfactory solutions to juvenile problems."

In one form or another, personology—the science of persons—is as old as civilization. The early Greeks are credited with developing a system of physical "character readings" by which they catalogued their politicians and statesmen. Literature, of course, is full of references to these qualities. You can still read about a "heroic jaw" or a "lean and hungry look" and every day you yourself probably make decisions on whether a man is trustworthy by the cast of his eyes or whether he'll be fun at a party by the shape of his face. But despite their popularity these notions have fallen into the disrepute of phrenology and palmistry and scientists have tended to dismiss the entire subject as devoid of adequate evidence.

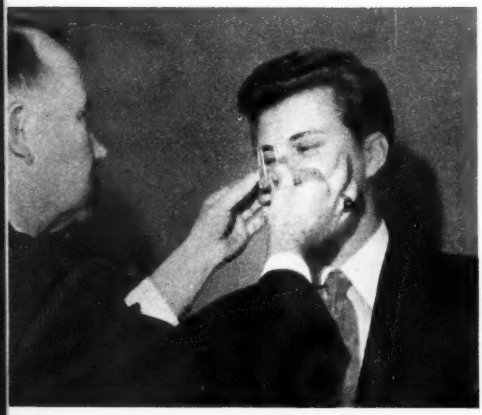
In recent years, however, the picture has changed remarkably. Such scientists as Prof. Ernst Kretschmer of the University of Marburg in Germany, Dr. William Sheldon of Columbia University and famed anthropologist Ernest Hooton of Harvard have indicated that the body gives definite clues to a person's temperament and character. Listen to Drs. Frances L. Ilg and Louise Bates

Bob Whiteside, Director of San Francisco Personology Foundation, uses a magnifying glass to discover indications of fugacity (temporary tension) revealed by dry-bright eyes and shiny skin. Small lines radiating from eyes show a verbal ability.

Elizabeth Whiteside illustrates two familiar facial types. Upper head (more face below nose) has stamina, physical interests. Lower is mental.



Whiteside, left, and client compare hands. Latter's three middle fingers are almost same length, show special aptitude in sports, piano playing.



Spacing between eyes relative to size of the eye aperture is measure of person's tolerance. White area under iris shows accident-proneness.

Ames of the well-known Gesell Institute:

"The child is born with a very definite personality (or at least with the possibility for the development of a certain definite personality) just as he's born with a very definite type of physical structure . . . In fact, the two things are not really too much different because, we believe, the child's behavior is a function of his structure. This means that he acts as he does because he is built the way he is."

Dr. Sheldon, who started his own research to disprove such relationships once and for all, ended up by devoting 15 years to the study of how your physical attributes mold your life. After examining over 4,000 people he came up with a classification that divided the human race into three broad categories: the endomorph or rolypoly, the mesomorph or bone and muscle, and the ectomorph or string-bean type. The chubby people, he found, are generally convivial, gossipy, interested in comfort. The bone-and-muscle men are the adventurers, athletes and the first to rush to war. The string-bean types are efficient, have a love of privacy, sleep poorly and are tight-lipped to strangers.

Bob Whiteside has gone a step ahead of all this. He has "validated" over 53 measurements of the human body and correlated them with specific qualities. Take your eyes, for instance. Are they wide-spaced? The chances are you are a pretty tolerant person. How about your ears? Do they sit near the back of your head or are they close to your cheekbones? Taken with other qualities they indicate something about your showmanship or your capacity for bearing a grudge. Similarly, the texture of your hair, the tone of your muscle, the lines under your eyes all reveal personality traits that can be read by the men and women trained in personology.

Let's see how all this works. The parents of Vaughn Shahinian, Jr., brought their son into the Whiteside office for an analysis because they were troubled about his career. They wanted the boy to become a doctor but he had expressed no special interest in medicine. What was the lad fitted for? Whiteside first measured the gross dimensions of Vaughn's body: the arm span, the length of the torso and the length of the legs. He then went on to finer measurements: the eyebrows, nose, proportion of eye spacing to head, relative length of the fingers. Simple instruments were used in some cases, like an ordinary paper gauge to measure hair thickness and a small rectangular grid to determine facial areas. The analysis took three hours and resulted in a physical profile from which Whiteside

made his deductions. In the case of Vaughn, Whiteside suggested the military life because the boy had all the qualities of a good officer. The parents pooh-poohed the suggestion. But as things turned out the boy took the West Point examination, came out highest in his Congressional district, and today is a career officer.

In another instance, Alice Elmgren was employed as a bill collector in San Francisco. Her analysis showed she had artistic ability. Whiteside convinced her she should paint and since then she has won three scholarships in art. An equally striking result occurred in the case of 13-year-old Ronnie Barrett of Piedmont, California. Ronald's parents were disturbed about their son's progress as a piano student until Whiteside explained that the boy had musical talent but was restless and needed to move around. Because of the boy's strong lips Whiteside suggested a mouth instrument. Ronnie took up the trumpet and in one year he had won an award as the best music student of his school.

Young couples frequently consult Whiteside before getting married. He tells them whether they're suited and in several dozen marriages so far he hasn't struck a single divorce. In one case an executive had divorced his wife twice and then remarried her. He was contemplating a third divorce when he came to see Whiteside. Bob showed them the bad qualities they should watch for and today, armed with this self-knowledge, they're back together and making a go of it. Whiteside has also successfully analyzed the members of marital triangles and by taking the physical measure of each he has consistently worked out a suitable solution to the difficulty.

Businessmen have turned to Whiteside for help in curing absenteeism. In one insurance office, for instance, where sick leaves were abnormally high the personology expert found the cause in a rule that the girls couldn't leave their desks and walk around unless absolutely necessary. Even the office manager who had made the rule suffered from headaches and backaches. Whiteside pointed out that the girls who had a long torso compared to their foot length needed to be on their feet to be happy; the girls with a short torso had to sit down. By analyzing the entire office staff one of Whiteside's students was able to recommend shifts that would make the girls happiest at their work. Six months later, absenteeism had been reduced by half and the tension in the office had disappeared.

Then there is the case of Ralf Maki, owner of King Kovers of Oakland, California, which is said to be the second largest auto seat-cover shop of its kind in the country. Maki has become so enthusiastic about personology he makes a practice of having all his employees physically analyzed. "Our business was growing so fast," he explains, "that there was constant bickering in the plant. But Whiteside's analyses helped me place the right man in the right job and in the last 18 months there has been no serious scrap and only one man has left our employ. Thanks to personology, I think we now have the most congenial employer-employe relationship in the city."

One remarkable diagnosis made by Bob Whiteside involves something he calls the "casualty syndrome." The results of examining several hundred accident-prone people had shown that the variation of the iris of either eye from level is a feature related to the individual's accident-proneness. An amateur pilot, he had found the same characteristic in his own physical makeup and promptly given up flying after several slight mishaps. But the striking relationship was borne home to him even more strongly when his own daughter, who had had more accidents in her youth than the average girl, fell from her bike in front of an automobile. Whiteside cautioned her on this characteristic and ever since she checks herself in the mirror before she leaves the house. If too much white is showing under the iris, she knows she is under strain and liable to be the victim of another accident so she takes things easy. Result: she hasn't had an accident since.

Today Whiteside conducts regular classes in personology attended by doctors, lawyers, employment counselors, nurses, housewives, radio directors, millionaires and entertainers. One of his classroom techniques is to spot-analyze an individual in the audience. If the group knows the person, he frequently has them keep score on the specific character traits he reads off from observation. Needless to say, he usually hits nine out of ten.

"After that, people said it was a put-up job," recalls Bob with a grin. "All I can do in such cases is accept the comment as a compliment."

In all of his work Whiteside stresses the fact that he offers no medical advice but the personologists nonetheless have accomplished some amazing things.

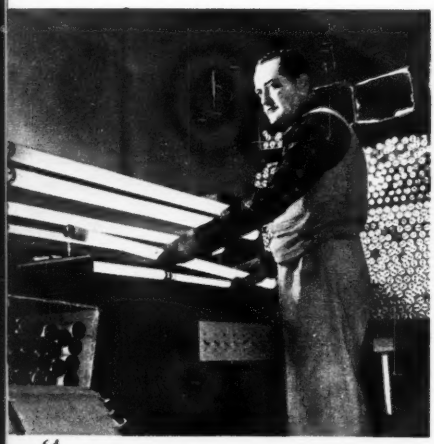
The doctors and nurses who attend the personology classes have reported some striking correlations in their practices. In cancer and gastro-intestinal patients, for instance, they have noted the presence of at least one of four traits—intolerance, exactingness (fussiness), considerateness (those who plan your life but spend their own lives feeling they are not appreciated) and criticalness.

All this, of course, is in the future. Meantime, Whiteside continues to amaze the skeptics by making his own astounding predictions from a person's carcass. •

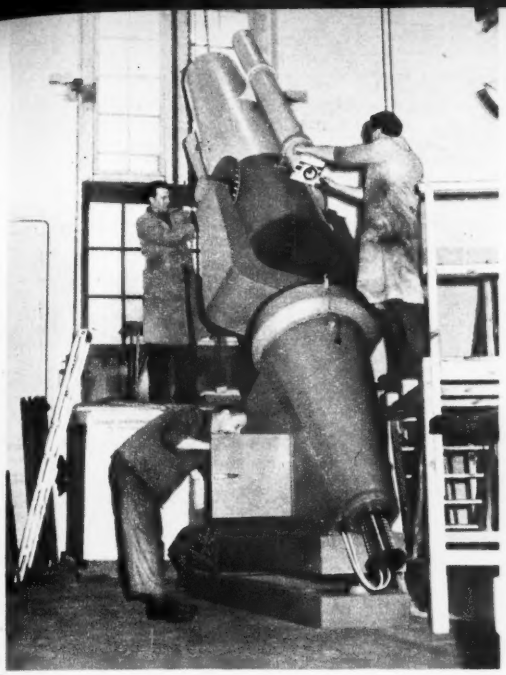
NEW in SCIENCE

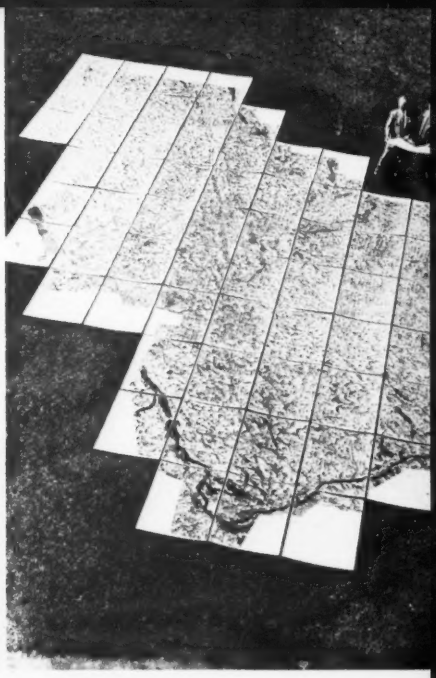
PLASTIC ARMOR, light and inexpensive, soon will be marketed by a Denver firm. It is laminated, can be cut, molded, bent or sawed, will stop bullets from the most powerful hand-guns at 25 yards. Material, yet unnamed, was invented to meet need for lighter armor for banking cars, but preliminary tests indicate possible military use. Plastic, above right, show dents from rifle bullets. Above left, new plastic-armored truck.

IMPOSSIBLE INVENTION of Bernard J. Patton of Los Angeles has confounded the scientific world. He calls it a "piano" and can't explain how it works. All he knows is that when he connects it to a burned-out fluorescent tube, the tube becomes good for another 2,000 hours of guaranteed service. He has started a local business.



PADDLE-WHEEL BOAT of new design, called Gazook, makes a test run in a swimming pool in Los Angeles. The three-passenger vehicle is made expressly for pools, calm lakes and romantic lagoons. Wheels, which contain sealed air chambers, can be removed quickly for storage of the boat for transporting on a car roof or small trailer.



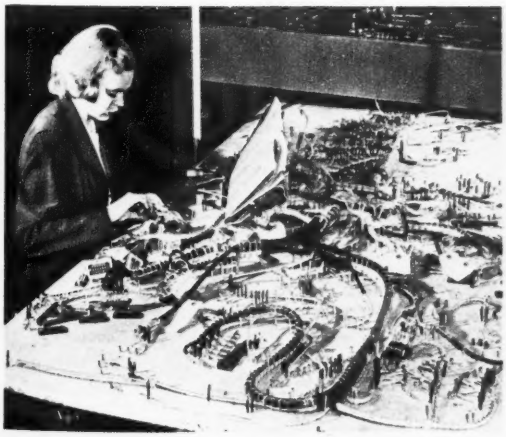


SECRET WEAPON? No, only a new three-ton camera being constructed in West Berlin to photograph the sky. It is the first made in Germany since World War II, will be used by Bonn University. Scientists say it will take photos of stars up to the 23rd class. The human eye can see stars up to the 6th class. Instrument costs $20,000.

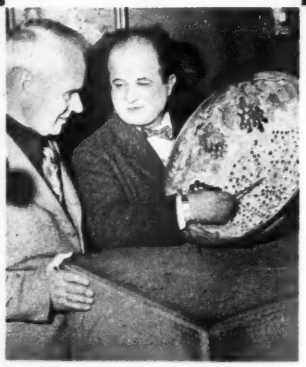
PHOTO MAP of area around Philadelphia, Penna., is about 33x45 ft., large enough to cover the side of an average two-story house. Each section was made from dozens of aerial photos carefully assembled into a photo-mosaic, then rephotographed. Work maps for Philadelphia Electric Co. were traced from it. Map includes 2,340 square miles.

NO MODEL RAILROAD layout, as a quick glance at the photo suggests, but the complex wiring mechanism of aiming device on a new anti-aircraft weapon called Skysweeper, designed to cope with enemy guided missiles, supersonic aircraft. A woman technician is checking the intricate hookup at General Motors AC Spark Plug Plant in Flint.

GLASSES FOR BLIND help ten-year-old boy from Patterson, N. J., who has only ten per cent vision to read fine print on card. New clear-image, high-resolution lenses will aid about half of 150,000 near-blind people in U. S. according to New York State Optometric Assoc. Each glass is combination of lenses set one-eighth inch apart.



An English ceremonial punch bowl, found in country store, made its owner $350 richer.



Trash or Treasure

Take your heirloom to Rothschild. He'll know if it's worth dollars—or peanuts.

By Lester David

SOMETIMES, Sigmund Rothschild is a good man to know. Sometimes, he's as welcome as a bill collector. It's because the stolid Mr. Rothschild who has uncovered more hidden treasure than Blackbeard, Jean Lafitte and the rest of the pirate mob combined, can make you a lot richer than you think you were. Or a lot poorer.

Mrs. Verner Alexanderson of Englewood, N. J., for example, was mighty pleased to make his acquaintance. She let him rummage through several baskets crammed with old papers dating back to Civil War days. They included six letters which Rothschild found were written by Abraham Lincoln's wife, Mary, to one Abram Wakeman and the entire material was one of the biggest historical finds in decades.

Rothschild put a $100,000 valuation on the lot!

On the other hand, a woman from Closter, N. J., got a letdown of considerable proportions. She handed over an old dental instrument, a fearsome looking thing used to extract molars, which had been in the family many years. "The man who gave it to my father assured him it was worth a lot and we

A woman is keenly disappointed when told Spanish stirrups, found in South America, are worth only $5. At far right, another visitor learns that Napoleon's stockings also are valued at $5.

Rothschild also restores art. This painting by Pierre Bonard was declared "lost" by insurance company. Now it's worth $3,500. At far right, he finds "Ming Dynasty" marble worth $18.75.

have been cherishing it," she declared.

Thereupon Rothschild delivered his judgment. "This gadget was manufactured in Brooklyn in 1850," he asserted. "It is worth . . ."

The woman leaned forward expectantly.

". . . about $3," finished Mr. Rothschild.

Rothschild, you see, is one of the country's foremost appraisers of antiques. Currently, the balding little gentleman with the calm, efficient manner of a scientist is setting hoarders of odds and ends agog with an immensely popular television show called "Trash or Treasure" beamed Thursday evenings over the Du Mont TV network.

The program is devoted to a methodical appraisal of relics most everybody's got stashed away in closet recesses, attics, old suitcases and garage corners or the heirlooms proudly displayed on mantel shelves. Rothschild, with clinical detachment, puts a price tag on everything anybody cares to bring in.

On the show as well as in his private appraisal work over the past 20 years he has told many thousands of persons their "trash" was worth cash. To balance things off, he's also had to inform an awful lot of hopeful folks their "treasures" were just so much junk.

That's how it is when people come to the studio with anything from old spitoons to umbrellas, great-grandma's coffee grinder to mummified hound's teeth, music boxes to a pair of red stockings worn by Napoleon. He examines them all and passes dollars-and-cents judgment.

When he does, the darndest things can happen. Not long ago Michael Mindlin, Jr., of New York City brought along a manuscript of Anna Christie, the Eugene O'Neill drama which won the Pulitzer Prize in 1922. Shortly before air time, Mindlin cornered Arnold Peyser, the show's producer, and asked anxiously: "Have you gotten word on this thing yet?"

Peyser replied gravely: "Yes. I think he'll say something like 20 bucks." Mindlin's face fell.

But it lifted again shortly after and stayed lifted when Rothschild announced it was *the* working script used for the rehearsals of the actual production of Anna Christie with revisions made in O'Neill's own handwriting. It's value? A cool $1,200!

It was something else again for a New Jersey train conductor who arrived clutching a 1943 penny. Because of wartime metal shortages, no bronze cents were struck by the U. S. Mint that year. This

Puppet of Pavlova from the Salzburg Marionette Theater he values at $1,500, far left. It would take months to duplicate.

Woman bought a statue of Queen Victoria in a flea market. It turned out to be porcelain from Chelsea, England, worth about $150.

one, however, was bronze. The trainman thought it was the find in a million. If it really was he could name his own price. As a matter of fact, he was so convinced of its value that he kept the coin in a vault.

Rothschild told him that his penny was worth exactly that. It was a wartime-issue cent upon which someone had put a coating of bronze to fool gullible collectors!

"About 90 per cent of the things people dig out from trunks and attics is trash," declares Rothschild, "but the other ten per cent has cash value, sometimes far beyond anything the owner dreamed of."

It is to the pursuit of this ten per cent that Rothschild has devoted his life. In addition to the television show he conducts a private appraisal business at his office, 119 West 57th St., New York City, and travels around the country looking in on antique fairs and exhibitions wherever he can find them.

To the office comes a steady stream of persons bearing ancient rocking chairs, statues, paintings, old letters and bric-a-brac of every size, shape and construction. Some leave happily, others sadly.

Happy, indeed, was the woman who learned that a batch of old Valentines from the 1880's she had found in a drawer were worth $600. And the smile was broad on William Mathews' face when he was told that a set of chessmen purchased at an auction long ago had been carved from ivory by Chinese craftsmen and were valued at $500.

Sorrowful was the aged South Carolina couple who had treasured through the years an old violin given them by a Civil War general. It was labeled Stradivarius and the old man and his wife had clung to it constantly as a guarantee against indigence. With the money they expected to realize from its sale, they were going to retire and travel.

But Rothschild had to tell them the violin was only a copy, one of many hundreds manufactured by a plant in Germany in the late 19th century and not a priceless creation of the famed violin maker of Cremona. It was worth only $65.

A woman came in with a painting which had been gathering dust in her attic for 38 years. It had cost only $105. Would Rothschild—who incidentally lists art restorations among his multiple talents—do a job on it? He did and presented the thunderstruck woman with a genuine Titian valued between $30,000 and $100,000. It seems that the painting had been sold at an auction of the effects of the late Stanford White, the great architect and no one had realized its actual worth.

But a pair of red stockings formerly belonging on the legs of the Little Corporal himself, Napoleon Bonaparte, was valued at only $20. As a rule, Rothschild explained, old fabrics don't have too much price appeal.

If you suspect that you may be harboring a gem, take it to a reliable local antique dealer. Or Rothschild may even give you an approximate valuation by mail order if you send him two or three clear photographs from several angles accompanied by as complete a description as possible and what you know of its historical background. For this he charges $5 per appraisal.

If you have something that might do for an appearance on the "Trash or Treasure" show, write a description and send it to the program, Du Mont Television Network, 515 Madison Ave., New York 22, N. Y. If it makes the grade, you will be invited to appear with it.

So go ahead and rummage. Remember that 10 per cent of the accumulated stuff in the nation's attics is worth money, sometimes real big money.

Who wouldn't take a flyer on a ten-to-one shot, particularly if the payoff may be a dollar sign followed by a numeral and lots of lovely zeros?●

HE FOUND A WAY...

William Gray's Pay Telephone

By Alfred Lief

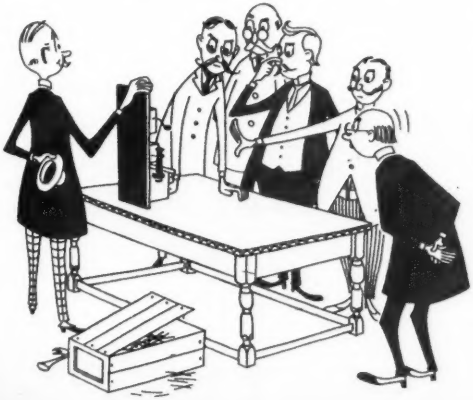
Another inventor's idea was to install a pay box on the door of the phone booth. Inserting a coin would let you go free—if you had a coin.

THE young wife of a machinist in Hartford, Conn., fell critically ill. The year was 1888. There were few telephones in town and William Gray had to call a doctor. He ran to a nearby factory and asked permission to use their phone. The manager said no; it was not for public use. But his pleading won consent, the doctor arrived in time and Mrs. Gray survived.

William Gray's mind clicked with an idea. Pay telephones did not exist in those early years of Alexander Graham Bell's invention. Gray saw a need. He proceeded to find a way.

His first thought was a box covering up the mouthpiece. On the principle of the slot machine, the box could slide open and give the caller access to the telephone. But the telephone company officials who examined Gray's device shook their heads. The thing was impractical. It let a person make any number of calls on one nickel. It did not permit a call to be made to another pay station unless the person called also deposited a coin to unlock that instrument. No means was provided for returning the coins if calls didn't go through.

Telephone officials scoffed at Gray's original design with a mouthpiece lock. "Don't be disappointed," they consoled. "Others have failed."



After tackling many theories Gray decided that the instrument should remain open. A user would reach the operator in the usual way, then deposit money as she directed. With each drop in the slot the caller would ring a bell. The only trouble with these signals was that the operator couldn't hear them! One day in Gray's workroom a coin slipped out of a helper's hand and fell on a bell. Gray was startled. Then he saw his solution. The coin itself must give the signal. The bell must be placed in its path.

In 1891 the Gray Telephone Pay Station Company was formed with Amos Whitney of Pratt & Whitney as president and Gray as general superintendent. They manufactured the instruments and set them up on posts (like street-corner fire alarm boxes), in cabinets (resembling grandfather clocks) and as desks.

Today the pay station is commonplace—945,000 of them in the United States. Indispensable? Worth everybody's while? They take in more than 9,000,000 calls every day. •

Dean of Fish Tacklers

EVER hear of William Mills & Son, Inc? What Tiffany is to jewelry, Mills is to the fishing tackle industry. It is the largest and by far the oldest concern in the United States and probably in the world, dealing exclusively in the thousand and one pieces of merchandise deemed essential by enthusiastic Waltonians.

Carrying on in a Victorian atmosphere with roll-top desks in an ancient building practically within surfcasting distance of Wall Street and New York's City Hall, the Mills outfit is 130 years old and going stronger than ever before. Its proprietorship is now into the fifth generation of the same family with the sixth coming up.

The Mills store has the same democratic spirit that may be found on a trout stream or a bass lake. Yet it's almost legendary that any fisherman who *is* a fisherman purchases his tackle at the 21 Park Place premises.

"Everybody from truck drivers to bank presidents comes in here," says fourth-generation Ed Mills. He might add, however, that the bank presidents—and Presidents of the United States, for that matter—have always comprised an unusually high percentage of the trade.

Herbert Hoover has been a Mills patron for years.

Calvin Coolidge enticed the finny denizens of sweet water with Mills products. Incidentally, Cal landed in a peck of trouble when he declared the only sporting way to hook a trout was by use of a floating fly. Worm fishermen all the way from Bangor to San Diego denounced him in no

Want a rod? Or reel? Here is a 15/16-oz. Leonard trout rod and Fairy reel—and a 34-ounce tuna rod with 16/0 Kovalosky reel. Far right, fly counter.

Mills stocks rod types for all game fish and if they don't have what you want, they'll make it to order. At far right a customer tries on English stocking waders.

Photos by Dan Rubin

uncertain terms. Inasmuch as they represented a much larger voting bloc than the purists, the gentleman from Vermont had to issue a retraction to the press.

Theodore Roosevelt was a steady Mills customer. F.D.R. wasn't though. He supposedly borrowed his deep-sea fishing equipment from another Mills client.

Grover Cleveland picked out his angling necessities at 21 Park Place. President Truman never opened a charge account with William Mills & Son—even he wouldn't be able to get a discount, by the way—but there's still hope, now that he's retired, that he may respond to the allure the store seems to hold for prominent piscators.

James J. Hill, the railroad builder, was a patron in years gone by and so was King Oscar II of Sweden. Woolworths, Goulds and Rockefellers have for years been sprinkled over the customer list. Many families have traded at Mills for four generations and a few for five. One billion-dollar institution in the Wall Street sector is known as the "Fishermen's Bank" because nearly all the officers are "compleat anglers" and their vote for Mills is unanimous.

One-third of the business is conducted by mail through the medium of a catalogue the company issues each year. The tone of the concern is struck by the introduction:

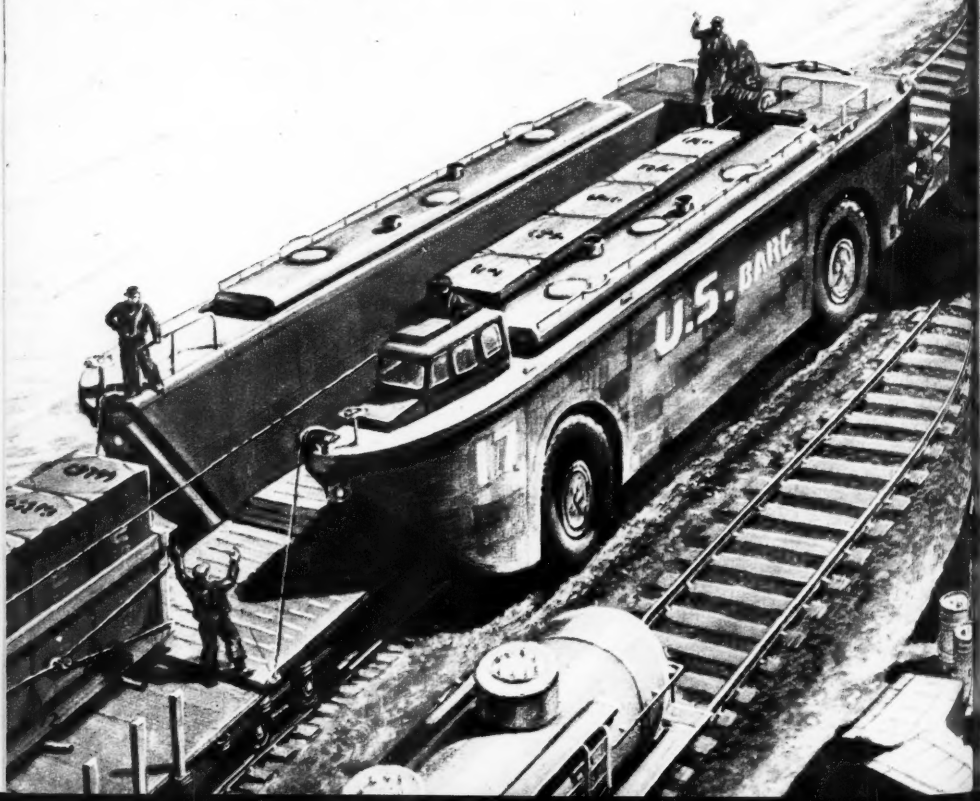
"We deal in FISHING TACKLE EXCLUSIVELY, and give particular and personal attention to all orders. We are experts; we can and do use our Tackle successfully. Our stock is the largest, most up-to-date and most varied in the world. You can be assured that if you send us your orders, our goods will give you perfect satisfaction. . . ."

Before World War II orders came pouring in from more than 50 countries all over the globe. Foreign trade in 1952 was considerably smaller due to exchange difficulties and frozen funds.

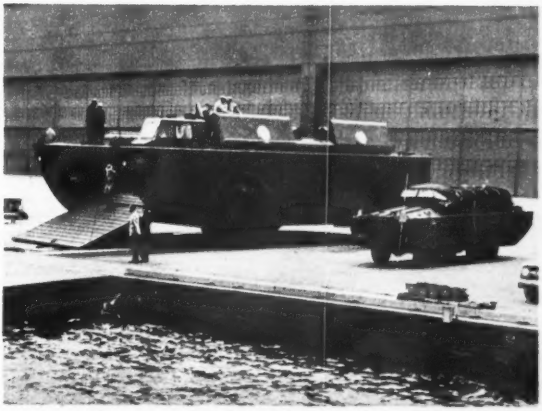
The demands for equipment on the part of American sportsmen come from every one of the 48 states. Of course the peak season for both mail orders and store visitors is in March and early April when hope springs [*Continued on page* 93]

BARC With a 60-Ton Bite

THE Army Transportation Corps' latest vehicle is the 60-ton BARC (Barge Amphibious Resupply Cargo). It's a sea-land behemoth designed specifically to haul heavy equipment such as big tanks, cranes and even railway locomotives in addition to artillery pieces and standard military items. It takes aboard its cargo from supply ships anchored off-shore and delivers it directly to the railroad flatcar or truck depot, dispensing with the difficult and inefficient job of handling material at the shoreline or beach. Its length is 61 ft., width 27½ ft., height 16 ft. •



Tires are 9½ ft. in diameter, weigh 3,300 lbs. each and their air pressure can be controlled from cab to meet changing ground conditions. Each wheel is separately powered by a 165-hp. Diesel operating through a torque converter. Above right, BARC disgorges a huge crane.



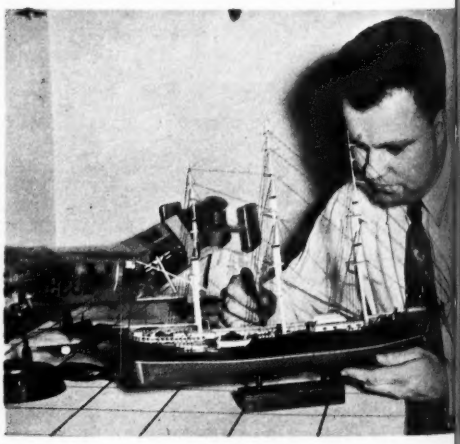
BARC, prior to its first water demonstration at Fort Lawton, Seattle, Wash., lines up with its World War II predecessor, the DUKW. Hatch covers, shown open, cover engines.

It is driven by twin propellers under the stern. Speed is secret. Driver's cab is at front left near loading ramp. Note removable steps which lead from hold to rear of cab.

COVER STORY

Model-Maker's Minicopter

Cementing the aluminum skin required much time and patience. Authentic insignia are added last.



A ship for Mrs. B. This is the Cuttershark, a model of a clipper design. He also makes cars.

You'll have to look far to find a Piasecki H-21 model to beat Boblasky's 700-hour job.

By Peg Coale

THERE'S one thing about Joseph Boblasky that makes him an ace among model-makers—he's a stickler for detail. Take, for example, his 4½-ft. model of the Piasecki H-21.

An engineer with Piasecki Helicopter Corp., he had three-view drawings to start with. From observation of the actual helicopter and photographs, he worked up details of cockpit components, internal and external design characteristics. The model took over 700 hours to complete. Construction started with the carved bulkheads, then stringers. The frame was planked over with $\frac{1}{16}$-in. balsa sheet. The whole fuselage then was covered with an aluminum skin from .006 aluminum stock and was bonded with a 3M rubber-type cement. The stressed-skin covering carries rivet marks just like the real ship. These were made by using a small clock gear attached to a handle. The gear, rolled across the thin aluminum, made rivet-like marks with its teeth. Boblasky likes to cover his aircraft models with the metal skins to give them a more finished look. The Plexiglas nose on the H-21 model had to be molded hot due to its unusual contours.

On the inside of the cockpit are the pilots' seats, rudder pedals and other controls, instrument panel with small instruments, each of which has been carved from balsa at an approximate scale of ½ in. to 1 ft. In addition, wire "bundles," exhaust stacks, engine screen, a sliding door and glass windows all lend a realistic appearance to what Boblasky considers one of his best models.

Boblasky almost wound up with an FBI investigation prior to World War II when he made a model of the North American O-47 then being used by the Pennsylvania National Guard. Watching the ship around the hangars, taking photographs of it on the ground, taking off and landing, Boblasky finally was able to make his drawings and construct the model. Proud of his super-detailed job on the O-47, he took it down to show to the National Guardsmen. The details were so complete they couldn't understand how the young man had done the job simply from observation and he was questioned too thoroughly for comfort as to his sources of information!

Primarily interested in airplane models, Boblasky has made early car models which are just as unique as his planes. And once every couple of years he makes a ship model for Mrs. B. just to compensate her for her patience while he has been spending long evenings on his hobby.

He never makes flying models. "Can't bear the thought of one cracking up after a single flight," he says. •

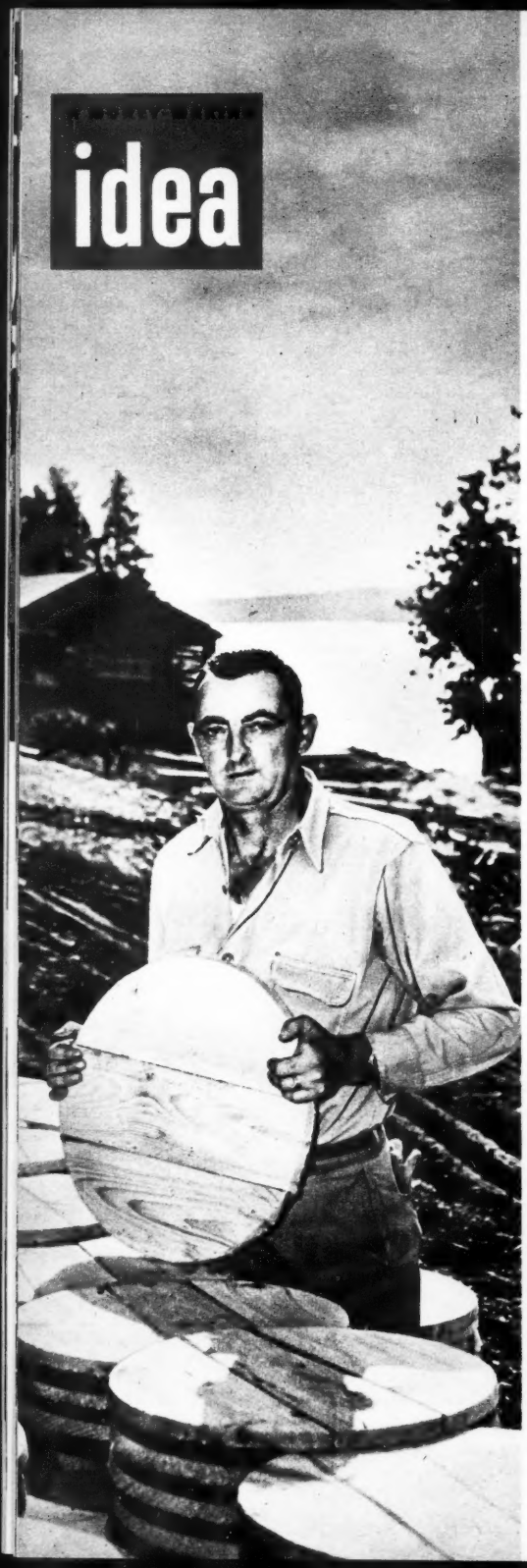
Helicopter model was taken from three-view blueprints.

Rivet marks are simulated on aluminum by clock-gear teeth.

Wright 1903 reveals great detail. On table is Curtis 1910.

MONEY-MAKING

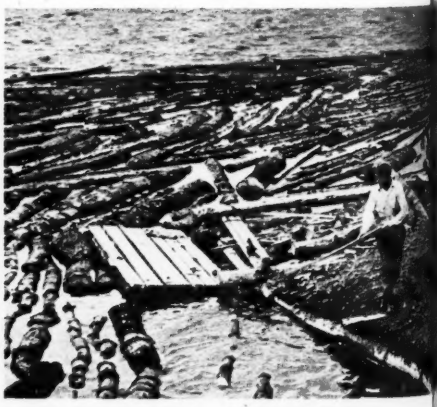
idea



I Put My Money On The Barrelhead

I left my native Maine to seek a fortune but found it back home in a mill industry that was popular forty years ago.

By Roy Sawyer



Boom of logs at entrance to Sawyer's barrelhead mill on the shore of Toddy Pond, Orland, Maine.

WHEN you get down to it, it's natural that I should saw wood for a living. The dictionary says my name, Sawyer means, "One who saws."

Forty-odd years ago there were seven barrel mills in Bucksport, Maine, a few miles from Orland and Bucksport is my home.

I started life as a farm boy. I tinkered with machinery and cut cordwood among other chores. When a young man I left the farm and took a job on a tow boat. This led me to the New York waterfront and, still restless, I soon found work in a shipyard. Then I took a paper mill job but this wasn't the answer either. I became a steeplejack. The money was good, the hours reasonable and the work exciting enough. Still something was missing and I finally went to work in the Maine woods.

I was reasonably content in the woods. Married, and the father of four children, I began to seek means of increasing my income. I found it in a barrelhead mill in Orland and one of my boys, George, has worked for me since he finished school. Now I am three times a grandfather.

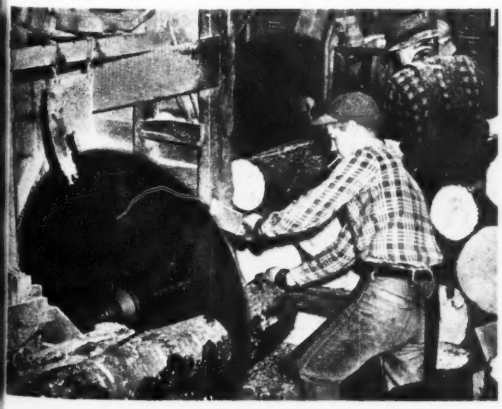
First I bought a stand of timber near the mill I now operate and started cutting and selling it to the mill. Finally, to be sure of a steady market for my logs, I bought the mill. At first I sawed all types of dimension lumber but when I discovered a good market for barrelheads I specialized and now they are my sole product.

Two score years ago it was a common sight to see a long line of horse-drawn carts loaded with barrels crossing the Bucksport bridge en route to the railroad station. A pair of horses would make one trip a day from mill to station. My trucks take a load of heads from Orland to the railroad siding in 10 minutes!

In those days complete barrels were turned out locally. When I bought the saw mill I looked into the barrel-making angle and found that I could sell heads at a profit and, in these times, do far better than by assembling complete barrels. My heads go into barrels that are used for many purposes and in large sizes are used as ends for rolls of newsprint. I ship heads to Chicago, Albany, cities in Connecticut, Rhode Island and Massachusetts and many more to Maine towns like Brewer, near Bangor, and St. Agatha, away up on the northern Maine-Quebec border. A paper company has shipped rolls of newsprint, held together by my large heads, to points as distant as India.

And who said barrelheads aren't romantic! Once a transient worker wrote a note on the inside of one of these large heads and, they say, received a reply from a girl in Paris. At any rate, he disappeared soon afterwards and I suspect is living in France in the arms of matrimonial bliss!

In addition to the regular sources, some of my products have gone all over the world as souvenirs. Maine is a vacation state and frequently the piles of heads beside my mill attract the attention of tourists. A New York woman bought a few recently and told me she planned to sandpaper and varnish them to use as lawn ornaments. Last summer an elderly woman from California stopped at the mill and took a lot of pictures. She photographed the mill, the machines and the processes by which heads are turned out. The unique industry and its pleasant location bring the world to my door as



First logs are cut to length with large circular saw, then split into boards which make the head.

Rough boards then are finished and edged and joined with birch dowels. Three make one head.

Automatic machine which gives it circular shape operates as easily as a cook's doughnut cutter.

truly as if I had indeed "made a better mousetrap."

In the old days, Bucksport barrels were used chiefly as containers for fertilizer. Changing times have resulted in far different uses. Heads shipped to Chicago and Albany go into apple barrels, those to cities in Connecticut and Rhode Island into barrels for brass fittings and those which I ship to Massachusetts are used chiefly in the assembling of fish barrels. Those shipped to Maine points go into potato barrels, of course. In the old days barrels had two heads. Now there usually is just one head to a barrel—the bottom—and a piece of burlap closes the top.

Barrelheads are made in other parts of the country but I believe mine is the only mill making them in the old-fashioned way. I like to think mine are stronger; they must be well-made to go into a barrel for shipping brass fittings, for example. They are butted, not tongued and grooved, and are joined together with hardwood dowels.

The heads are sawed one-fourth inch oversize to allow for shrinkage and are piled in such a way that air can circulate among them to hasten drying. Sometimes the demand has been so great that I've had to ship without waiting the three weeks I usually allow for shrinkage. Orders have asked immediate shipment regardless of shrinkage and in such cases we've had to cut heads to size.

The several steps in the manufacture of my barrelheads are easily explained. Logs float outside the mill in a "boom," a series of logs chained together to form a barrier to hold the other logs. A man with a long-handled pick-pole works the logs into position at the foot of a long ramp. He passes a chain around several of them and gives the signal to hoist away. A toothed gear is thrown in to mesh with the chain and wind the logs up the ramp. There a man with a peavey rolls the logs one at a time onto a set of up-pointed steel teeth. A sawyer works a table back and forth in front of a huge saw and the logs are cut to length. Next they are split into boards, cut to more accurate length and joined edgewise with dowels.

Then the tricky part begins! We have a machine which cuts out circular barrelheads as easily as a woman cuts doughnuts out of dough. Anybody watching this machine for the first time is fascinated. The boards are clamped into a tooth-like circular jaw and the table whirls around an offset saw blade. In a flash, the square boards are a round barrelhead.

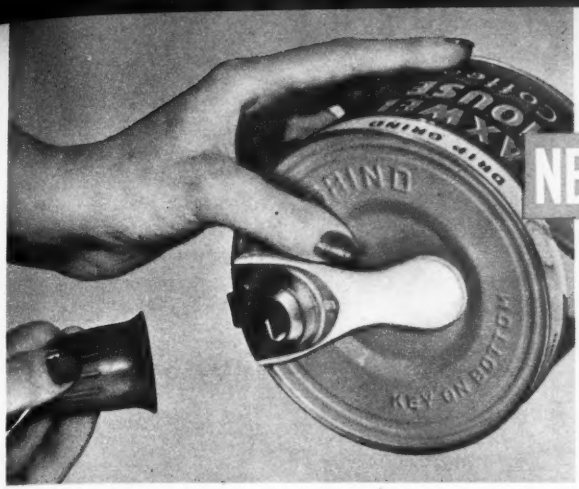
Some idea of the number of heads I produce may be judged from the fact that late last spring I had 72,000 piled up for shipping. By August this supply was nearly gone and orders were coming in fast.

Near the mill lies a lake known as Alamoosook. It offers us excellent bass fishing but also contains an unusual species of fish called Scotch sea trout. The lake empties into a stream which flows into the ocean and the fish come into the stream and Alamoosook lake to spawn in the inlets and may be seen in the fall lying in the shallow water like salmon. They run up to six and eight pounds and fight like demons when hooked. They are tough to catch but that makes them all the more intriguing. Records show that eggs were brought from Scotland and stocked in the lake many years ago. The fact that they exist so near the mill is just an added reason why I like to make barrelheads where I do!

Wild ducks come into the mill pond, too, and we have good duck hunting there and along the nearby coast. We're close to good woodcock and partridge shooting and deer are plentiful in the woods.

In five years my income has more than doubled. With companies elsewhere assembling the barrels, work certainly has increased over what it was in Bucksport 40 years ago. Concerns like the Howard Barrel Company in Brewer, Maine, and Parady Bros. in St. Agatha now take over where my mill leaves off. By far the greatest use of such barrels is in Aroostook County, Maine, the potato empire of the East. Add to the countless barrels of potatoes, the lobsters and other sea foods shipped out of Maine, the apples, brass fittings and many other items which need barrel containers, and you can see why I'm convinced I made a wise decision when I put my money on the barrelhead. •

NEW for the HOME



COFFEE TAP punctures and fastens to the top of your can of sealed coffee so you don't have to remove metal band. Cap preserves flavor, serves as coffee measure. Tac Shop, Newton Centre, Mass.

SUPERSONIC WASHING MACHINE, now made in U. S., washes clothes by sound waves which vibrate water and shake dirt loose. It makes low humming noise when in use. Fairbanks Ward, Chicago.

MERRY TILLER is motor driven tractor and rotary tiller weighing 85 lbs. With attachments it can plow, harrow, mow, disc, fertilize, etc. Has 2-hp engine. Beaumont and Hohman, N. Y. C.

SUPER TV TOWER made of aircraft-type tubing and weighing 60 lbs. is 20 ft. high, extends to 40 ft. Crank at ground level operates telescoping mechanism. Tele-Vue Towers, St. Petersburg, Fla.

ELECTRIC PEN prints monograms, signatures, designs in gold on leather goods, cloth, silk, paper, plastic, wood, etc. Writing is made through strip of gold paper onto item. Osborn Bros., Chicago.

INCINERATOR CAN made of heavy steel with perforated sides has chimney in center to facilitate draft and quick burning of refuse. Cover keeps in sparks. Rochester Can, Rochester, N. Y.

1902 Schacht Auto-Runabout

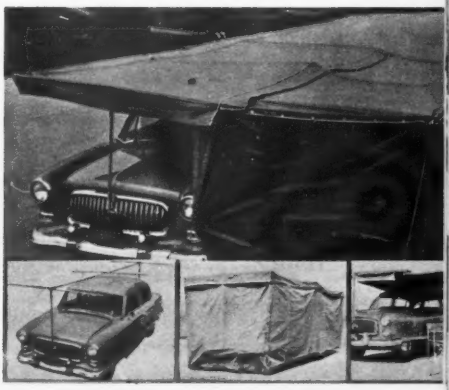
Owners: Mr. and Mrs. Max Palm III, Cincinnati, O. Original cost: $640. Engine: two-cylinder opposed, 18-20 horsepower, bore 4¾, stroke 4 inches. Friction transmission, double chain drive. Wheelbase: 74 inches. Weight: 1,200 lbs. Top speed: 30 mph.

WHITE-WALL SPRAY will clean even the dirtiest white sidewall tires. It works chemically; no hard scrubbing is needed. Rub on, rinse off. Harmless and noninflammable. Kelite, Los Angeles.

CABIN SCOOTER designed and built by Alvin Rhiando, Canadian engineer, for $4,000 will attempt a 10,500-mile trip to South Africa.

NEW for the ROAD

FOLD-A-TRAY fits permanently on inside of door of any car. Flip it down and it will hold your hamburger, drink without muss. Chromium plated. Maryland Mail Order, West Hyattsville, Md.



CAR TENT-GARAGE has sturdy framework which attaches to bumpers and is covered with waterproof cloth. Side curtains snap in place for rain, sleeping. Kar-Tent, Santa Monica, Calif.

WIN $25

Send in a sharp, glossy photo of a snazzy car, old-timer or new, posed as at left with owner or a pretty gal. Include self-addressed, stamped envelope (just in case) and all vital statistics about car and owner. Mail to Pin-Up Editor, MECHANIX ILLUSTRATED, 67 West 44 St., N. Y. 36, N. Y.

FREE CAR WASHERS at Weyerhauser Timber Co. operate automatically when car drives over switch. Nine pressure nozzles spray water for 45 seconds.

MI Tests the '53 Dodge V8

Long famed for rugged reliability, an old-line car comes up with a new engine that makes it a wildcat on wheels.

By Tom McCahill

IT may be that 1953 will go down in automotive history as the year Detroit got out of the ice wagon business. At any rate, the 1953 Red Ram-powered Dodge V8 all but straightens out the horns on that hood-ornament goat when you jump the accelerator—and if that doesn't mark the end of an era, I don't know what does.

Dodge, over the years, built up a reputation for making one of the most reliable automobiles on the American roads. Or off the roads, for that matter, because away back in 1916 when General "Black Jack" Pershing was chasing Pancho Villa around

A 114-inch wheelbase coupled with the new 140-hp Red Ram engine make hardtop Diplomat, left, a top bet for stock car racing title in '53, Tom says.

the sandbanks along the Mexican Border, his command car—Pershing's, that is—was a Dodge. But the good old reliable Dodge was rarely ever considered when talk got around to top performance. Until now.

Just to make things a little sportier, I'll stick my fat neck out to here and state that by next fall the new V8 Dodge will be one of the top American cars in stock car racing, if not *the* top. Sure, I'm taking the new Lincoln into consideration but I'm also thinking about that shorter version, 114-inch wheelbase Dodge which will be much easier to handle on one-mile tracks with the overdrive or straight three-speed manual shift. (If I'm right, I'll remind you. If I'm wrong, I know you fellows will remind me!)

This new, 140-horsepower Red Ram V8 engine powers the entire five-model Coronet line, which includes the 119-inch wheelbase four-door sedan and club coupe and the 114-inch hardtop Diplomat, the convertible and the Sierra station wagon. Between the two wheelbases, I'll take the shorties every time. The two-door, hardtop Diplomat is faster and much easier to handle than the larger models. When tied up to the now available manually-shifted overdrive, it will stay with the hottest cars on the road and will top 100 miles an hour.

Over a rough Michigan field, below, the new Dodge proves to Uncle Tom that it still has the fine shock-proof characteristics built into Chrysler cars.

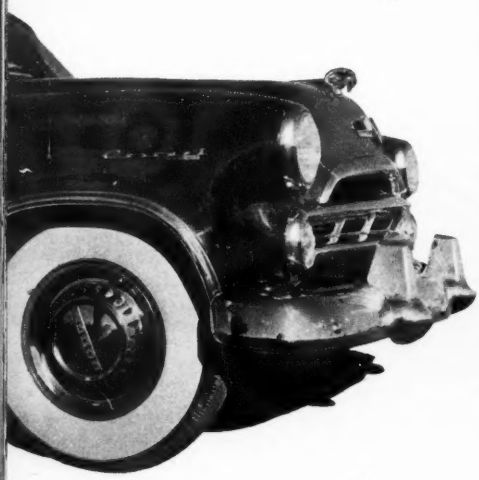
The car I tested unfortunately was equipped with the Gyro-

Torque drive (automatic) and not the overdrive (manually shifted) unit. I made all my tests with the gizmo except for a full top-speed run. The day I tested the car, traffic was impossible and even my Detroit measured mile, which is usually as deserted as a school room on Christmas Day, was cluttered with an army of road workers. Zero to 60 took 15.11 seconds on a corrected speedometer and I feel safe in saying a good slam-shifter in a car equipped with the overdrive unit could have lowered this by at least two seconds.

Compact design of the '53 Dodge is brought out in view at left. Larger back window, gas tank filler pipe at left rear, lower fender line, are new.

For my top speed information I'll place any inaccuracy right in chief engineer B. W. Bowgan's lap. He told me, and I told him he'd be quoted, that the two-door Diplomat would do an honest 101 to 102 miles an hour. If an advertising boy or sales kid had told me this I wouldn't have believed him on a ten-foot stack of Bibles. But chief engineers are different. I have never heard the top

Completely new styling this year gives the '53 Dodge Coronet line a slightly Continental look.



And here is the Red Ram V8 engine which Uncle Tom thinks may make Dodge a stock car champion.

engineers of any company make exaggerated claims about their car's performance, so I am willing to accept Bowgan's statement.

The real big news at Dodge is, naturally, its new 140-horsepower V8 engine. This is actually a cut-down version of the Chrysler 180-hp power plant, with most of Chrysler's early bugs erased. Like the big Chrysler, it will be a lead pipe cinch to hop up if you so desire. Or you can leave it alone and still not have to take any exhaust fumes from the fastest cars you may encounter. The $3\frac{7}{16}$-inch bore and 3¼ stroke make this new Dodge mill an over-squared rig, which means extremely low piston speeds even with an open throttle and should mean a much longer engine life.

The engine will prove fairly easy to service with the exception of the distributor which is tucked way in the back, leaving little room under the alligator hood for inspection. Mechanics are human and manufacturers should give this factor more thought. If a unit is hard to service, most mechanics will say to hell with it and the buyer will suffer as a result. Without having any proof on hand except that I once owned and operated a sizable repair shop, I'll bet a two-year subscription to The Bloomer Girls' Best Friend that, as a general rule, cars easy to service give much less trouble on the road than the back-twisters.

The compression ratio on these new rigs is only 7.1 to 1, very low by modern standards, which should mean that they will give passable service even on poor English fuel. Also, by American standards the Dodge has quick steering, four and a half turns from lock to lock. This makes them safer to drive than many of their contemporaries and the center steering control between the wheels tends to make these cars stay on course better. In addition, this year's Dodge has slightly toed-in rear wheels and wider rear leaf springs to dampen tail-wander. The brakes are excellent and are capable of tossing Granny right through the windshield if you time it right.

The transmission department is the usual Chrysler products maze of confusion except that Dodge has broken loose after more than ten years and now offers a real honest injun three-speed transmission in addition to an overdrive unit. Actually you can order your little goat-head with any one of four transmissions. Besides the regular three-speed and the overdrive unit, you can still get that dog, Gyro-Matic drive, or the new and lesser dog, Gyro-Torque drive. I won't bore you with the harrowing details.

In the looks department the new Dodge has some unusual angles. In a John Barrymore pose it has quite a pug nose and somewhat resembles an earlier Dodge that kissed a concrete wall head-on. From the

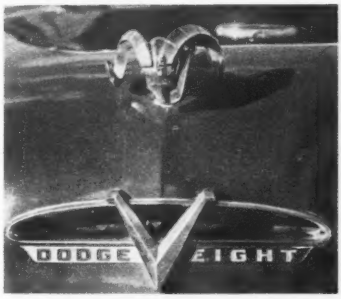
Although more compact than last year's model, the new cars offer more room for hips and heads.

Uncle Tom tests the push-button lock on deck lid. The lid can be closed without locking it.

rear the cars look slightly jacked up but this will undoubtedly flatten out after a few thousand miles when the rear springs take a set. The paint jobs, especially the Esquire red, reflect more quality than many more expensive loads can brag. The one-piece windshield is also a new note and in the dozens of new Dodges I checked over I found very little glass distortion so common in the aquarium wrap-arounds.

Inside, the famed Chrysler chair-height seats are all they say in the ads. Chair-height for the average bale of bones means more comfort, especially on long runs. I found, however, that the front seat ash tray is an adult gorilla's arm reach away from the driver, which is silly. The car is quiet when under way and even at high speeds there is very little wind noise. The trunk compartment is big enough to stuff a bull moose into, providing you chop off his legs, and all in all this new Dodge is a great car to hit any trail with.

The ride is quite shock-proof and though there is a slight amount of body roll in hard corners it handles them much better than its longer wheelbase brothers. This brings up a story. Last summer I was driving a Citroen through Switzerland. As you probably know, the front-wheel-drive Citroen is one of the best mountain cars in the world. Assaulting the Great Saint Bernard Pass from the North, perhaps the toughest mountain pass in Europe with plenty of [*Continued on page* 189]



SPECIFICATIONS

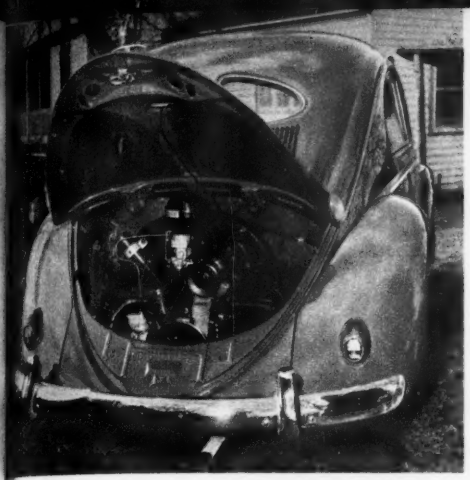
MODEL TESTED:
1953 Dodge V8 2-door hardtop (Diplomat) convertible with Gyro-Torque Drive
ENGINE:
8 cylinder, V-type, OHV; bore 3 7/16 inches, stroke 3¼ inches; piston displacement 241.1 cubic inches; maximum torque 220 foot pounds @ 2000 rpm; brake horsepower 140 @ 4400 rpm; compression ratio 7.1 to 1
DIMENSIONS:
Wheelbase 114 inches; overall length 191¼ inches; width 73⅛ inches; height 61 inches; weight 3,285 pounds; standard tire size 7.10x15; gas tank 17 gals
PERFORMANCE:
0 to 30 mph, 5 seconds (in L only)
0 to 30 mph, 6.75 seconds (in D only)
0 to 50 mph, 11.11 seconds (using L and D)
0 to 60 mph, 15.11 seconds (using L and D)
0 to 60 mph, 19.2 seconds (in D only)
0 to 70 mph, 23.2 seconds (using L and D)
Top speed, 101-102 mph

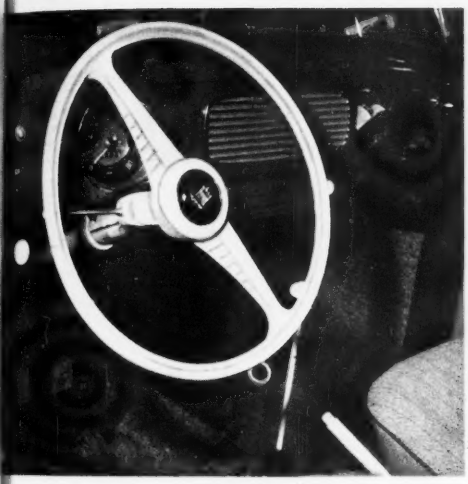
McCahill Drives the '53 Volkswagen

It's no raving beauty and it will only do 66 mph wide open—but this little German bucket really puts out when the going gets rough, says Tom.

NOT since Ben Hur whipped his chariot into a broad slide with a hopped-up horse has a more surprising vehicle been developed in Europe than the 1953 Volkswagen. Now, before you start accusing your Uncle Tom of blowing his bald stack, let me qualify the statement.

The Volkswagen, which hits a top speed of around 66 only after you've held it wide open for several complete turns of a stop watch, is no sports car by the weirdest definition. But gamboling around in two snow storms during my long test, I had more sport with this paperweight than you could have with a Cunningham. Almost every car built today is a passable





Volkswagen's 4-cylinder, air-cooled, overhead-valve rear engine develops 24 hp at 3000 rpm. Strictly functional controls and instruments, plain inside trim, help keep its price in the $1,400 class.

Ice underneath loose snow on back roads near Uncle Tom's New Jersey home failed to stop the little German car, whose ability to keep going under adverse conditions is surprisingly good.

fair weather friend but when the going gets rough I'd sooner be behind the wheel of a Volkswagen than most cars I can think of.

Late in the afternoon of New Year's Eve, in a snarling near-blizzard, Jim McMichael and I headed out of New York in a Volkswagen for my home in the New Jersey mountains. Before going 25 miles we found cars stalled and others skidding hopelessly as they tried to assault the simple rises of a dual super-highway. The Volkswagen weaved through these churning iron hulks like a broken-field runner. The heater was giving us Palm Beach weather inside the little cab while outside all hell was cutting loose.

The car hits the scales at 1,600 pounds and six-foot-four McMichael and myself topped 500 on our own. This meant roughly that it was carrying a third of its total weight in passenger load under tough conditions. As soon as I found clear spots where no other cars were fighting for traction, I deliberately threw this car into skids several times to see how it would act. Our big passenger weight, contrary to popular belief, was not helpful in giving the car traction and only helped throw it somewhat off balance.

When McMichael and I finally got to my home hill we [*Continued on page* 181]

THIS MONTH'S PRIZE

gadget

Photos above show how the belt is installed and operates. It is made and distributed by Webelt, Dept. M, P.O. Box 117, East Yonkers, New York.

Kiddie Car-Belt

RICHARD G. OSTRANDER of Yonkers, N. Y. is not a man who puts things off till tomorrow! Recently his young son narrowly escaped injury when he was thrown off an automobile seat by a sudden stop. To Ostrander this was a situation when *stop* meant *go*. He decided to do something about it and a few days later he presented to harassed parents everywhere his Wiggly Car Belt, a safety device for youngsters.

The belt, which can be installed in a few seconds, is made of sturdy webbing and consists of two sections. One encircles the back of the car seat and the other fits around the child's waist. The latter slides up and down the back strap by means of a D-ring. This arrangement allows the child to stand, sit or lie down as he desires but prevents him from falling from the seat or being thrown into the dashboard or windshield when the car stops suddenly. The Wiggly Belt can be left permanently attached to the seat. Junior, too, if you wish. •

WIN $50

Dreamed up a neat gadget? If you're pretty keen about that pet project of yours, get busy and work it out in your shop. Then send pictures and a description of your invention to the Gadget Editor, Mechanix Illustrated, 67 West 44th Street, New York 36, N. Y. Each month the best entry gets a cash prize of $50.

HE MAKES MATCH-TERPIECES

When Kevin Anderson of Los Angeles asks for a match, he doesn't light it. He makes it into a work of art. First he makes a drawing, then glues matches carefully in place, right.

Some matches must be cracked or broken to follow curved contours. When design is completely covered with sticks, he carves in relief, far right, then sandpapers smooth.

Final step is painting with water-colors. At right is shown a completed portrait of two flying ducks and below it is an equivalent number of matches used in the project.

Anderson is justly proud of his copy of Blue Boy, Gainsborough's famous painting, far right. He has also done General MacArthur, but prefers pictures of animals and birds.

Bonefish-

Surf-casting for bonefish is popular method in Bermuda. He's strong, built for speed, above.

Salt Water Lightning

He's not pretty to look at and he isn't something you would want on your dinner table—but he's a fighting fool!

By Raymond R. Camp

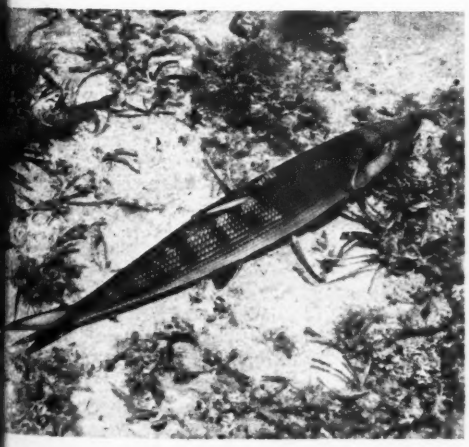
Rod and Gun Editor, N. Y. Times

"THERE'S nothing a bonefish can do that a bolt of lightning can't do except run in circles," dyed-in-the-wool bonefishermen claim. It may be that their excitement over this fishing is exaggerated but you will never get one of them who has taken a ten-pounder to admit it.

To convert an angler to a state of boundless enthusiasm for one particular fish normally is a lengthy process but thousands of bonefish addicts have acquired that special gleam in their eye after hooking, playing and landing only one of these silver fighters. Therefore, there must be something special about this fish. It can't be his size, for the world's record specimen scaled only 16 pounds and for exactly 29 years a 13¾ pounder held this title. The answer, I am convinced, and I became a bonefish enthusiast 20 years ago, lies in the all-around challenge of the fish, its habitat and the skill needed to capture it.

Bonefishing is never a contemplative form of angling. The angler who is not sharply alert from the strike to the netting will never be successful in this sport. In the old days before star-drag reels became common, you could always tell a bonefish enthusiast by the blisters on his thumb and by the far-away look in his eyes when he was separated from his favorite bonefish flat.

Some modern anglers insist that the present popularity of this fish is due to the light tackle trend and the fact that the bonefish provides the peak of sport and action when taken on a light rod and line. The fallacy in this reasoning lies in the fact that this scrapper was just as popular among knowing anglers when heavier tackle was used. The present enthusiasm is the result of more people having had an



This one was caught, released in a coral pool. Dark stripes on back appear when he is tired.

Ted Trueblood, well-known fisherman, outwitted his prize with a fly while fishing the flats.

Working the flats off Bermuda. Long pants, shoes, are better protection against annoying sea life.

opportunity to visit the spots where the bonefish hangs out, although it must be admitted that fly fishing has added a lot of purists to the ranks.

The very habitat and habits of the fish add to the interest as well as the challenge and certainly do nothing to detract from the excitement. Although he spends a certain part of each day in deep water, the bonefish is seldom caught except on the tidal flats of tropical waters. The "hot spots" are not plentiful and the most popular areas can be counted on the fingers, taking in Bermuda, Bimini, Walker Key and the fringes of the countless keys that stretch from the end of the Florida peninsula to Key West.

The best fishing is on the flood tide. The smart angler gets out on the flats at full ebb either by wading or by poling a shallow-draft skiff. The bonefish moves in on the flats as the tide rises and the novice has to learn how to spot the fish long before it comes within casting range. The problem is not solved by the mere spotting of a fish, either, for no more wary quarry ever swam in fresh or salt water.

The bonefish is seldom still but will be seen moving slowly on the tide and the problem of the man fishing with a shrimp or conch bait is to figure out the fish's course and drop his offering ahead of it. The best method is to cast a bit beyond the line of feeding which permits the bait to be slowly and carefully retrieved if necessary. And the man who drops the bait with a splash might as well reel in and try to locate another fish for any unusual sound or movement "flushes" every bonefish in the area. I have seen a school of bonefish flushed by an outboard that was passing more than a half-mile distant. Even the moving shadow of a caster can send the fish flashing off to another feeding ground.

Like the successful hunter, the bonefisherman "stalks" his quarry and as the tide rises the fish becomes more difficult to locate. Being a bottom feeder, however, it is often possible to locate him through a "mud" or a cloudy discoloration caused by his rooting the bottom as he moves. Under such conditions the long, accurate and quiet caster does the most business.

In taking a bait the bonefish often displays a surprising gentleness. The experienced angler delays setting the hook until the bait has moved several feet and before he makes the strike he checks to make certain that his decks are clear for action. When the barb sinks in, the bonefish makes a run that causes line to melt from the reel and then, as the angler is about to resign himself to losing not only the fish but all his line and puts on a bit more pressure, the fish will turn and come back almost as quickly as he left. While the angler is frantically trying to get the slack back on his spool the speed king may decide on a side run and the problem is further increased. Once the right amount of pressure has been determined, and it varies with the size of the fish, the angler begins to get some control and often the fish will make wide circles around his position. At any moment, however, that circling movement will be abandoned in favor of another run. Success is never certain until the bonefish is IN the net.

The spinning outfit has become a popular method for taking these fish during the past two years and this rig has the advantage of being able to cast a light bait a considerable distance. Handling a big

bonefish on a spinning reel, however, often proves to be quite a task as many have discovered.

Fly fishing for these scrappers is a fairly recent practice although many experienced fly casters experimented for years without success. One of the finest salmon fishermen in the country, who had a winter home in the Keys, spent a lot of time in an effort to take one on a fly and finally gave up, insisting that the shadow of the fly in the air was enough to frighten this wary fish. Others persisted, however, and eventually a method has been worked out that proves successful—providing you know how to handle a fly rod and can lay out a long line. It was discovered that by casting ahead and beyond a feeding fish and by using a long leader, the fly could be presented in a manner that would not frighten the fish. However, it was also discovered that the angler who required more than three false casts in order to reach the fish was unlikely to enjoy the thrill of playing one on fly tackle. The activity of repeated false casting usually proved too much for the fish.

Special fly rods have been developed for bonefishing, most of them ranging in length from 9 to 10 feet and with enough backbone to lay out 100 feet of torpedo-head line. Casting a long line is one thing but doing this and at the same time dropping a fly "lightly" on the water is something else. The matter of "presentation" is just as important here as with dry fly fishing for brown trout.

Bonefishing is not an expensive activity unless you want to take one of the deluxe cruises to an outer flat and be pushed around the area by a guide. Many have found, however, that the cost of a guide for the first experience was well worth the price especially in providing information on good fishing grounds and methods.

The fisherman on the flats does not always get only bonefish for even here the tropical grab-bag shows its influence. He may tie into a barracuda, a small shark or even a redfish or channel bass. During the spring, when the run is getting under way, he may even hook a small tarpon and by "small" I mean anything up to 100 pounds. Tarpon in the 100-pound class have been taken on fly rods in this area but it must be admitted that many more are hooked than taken on these outfits.

If you can afford to risk addiction, bonefishing is one sport you should not miss. But it would be unfair to urge this without offering a warning on the pitfalls. I had a friend who, after taking his first bonefish, quit his job in New York, rented a tiny shack in the keys and wrote his wife to join him on the beach or establish residence in Reno. The lotus-eaters had nothing on bonefishermen. •

Dean Of Fish Tacklers

[*Continued from page* 71]

eternal in the human breast and Joe Doakes figures he's going to net that 30-pound rainbow in Catherine Creek this time for sure. Waltonian nuttiness hits a pinnacle when the ice leaves the lakes and streams and a trouting addict mapping out his annual campaign is a creature awesome to behold.

During the war and for a few years afterward Mills' sales volume slumped because of material shortages. Things picked up beginning in '48, and '53 promises to be the biggest year in the firm's history.

William Mills & Son manufactures a large part of the equipment it sells. The most famous products, the H. L. Leonard split bamboo rods, are made at a factory established three-quarters of a century ago at Central Valley, N. Y.

Making a fine rod is an art in itself. The bamboo of hand-picked quality is imported preferably from China's Tonkin Province. After being aged for several years the cane is split for processing. It takes five or six months actually to put a rod together—matching and gluing the strips, fitting the ferrules, making tests for action, et cetera.

Hundreds of thousands of Mills flies are tied each year at the firm's second factory located in Geneva, N. Y. Counting for variations in size as well as pattern, the Park Place store keeps approximately 15,000 separate and distinct types of flies in stock. They range from a No. 20 Quill Gordon somewhat resembling an underfed mosquito, to the big Black Dose tied on a 3/0 to 5/0 big shank or double hook which allegedly spells *finis* for the Atlantic salmon of New Brunswick and Nova Scotia.

The biggest order in the Mills history came in the mail from a character in South Africa.

"Please send me immediately one gross of everything in your catalogue," he wrote.

Investigation showed that the would-be customer was unable to foot the bill. He was, as a matter of fact, receiving his room and board absolutely free within the walls of a lunatic asylum!

The South African gent simply proved something that most people already knew, namely, the adage that "all fishermen must be nuts." Crazy or not, devotees of the angle have a wonderful time. Especially when they use tackle by Mills.—*West F. Peterson* •

hobby
HALL OF FAME

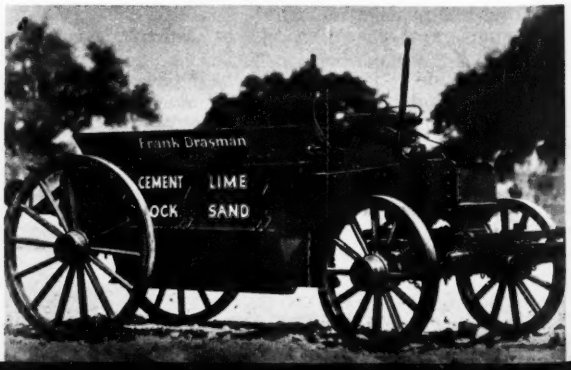
Ivan L. Collins: Horse-Power Historian

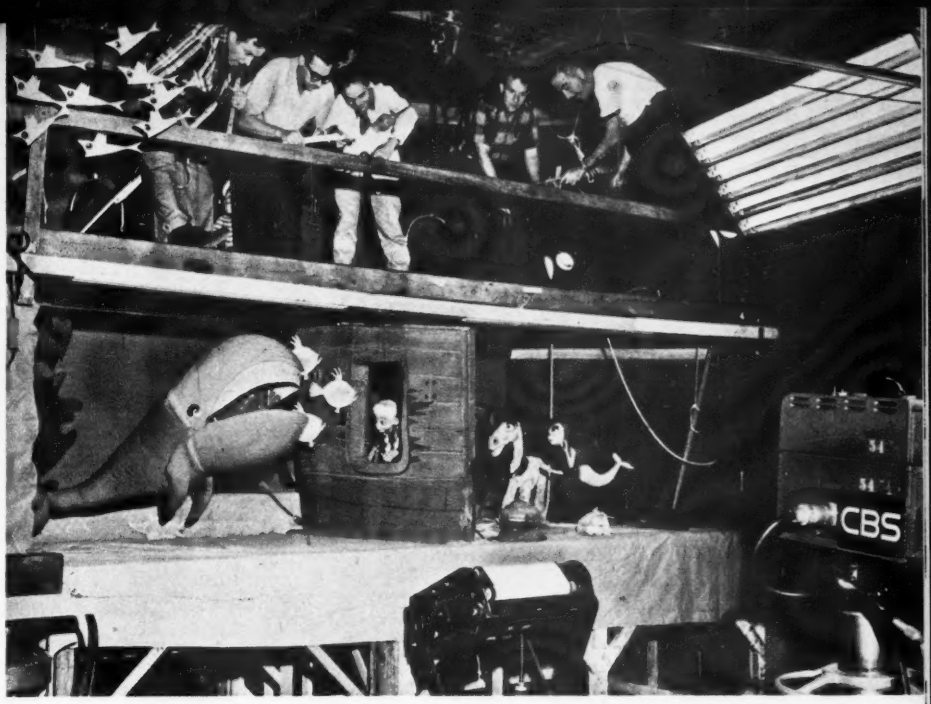
IVAN L. Collins of Stanford, Calif., has one of the world's finest collections of miniatures of horse-drawn vehicles which were popular in nineteenth century America. They were made by him at a one-eighth scale and took many hours of study and tedious assembly. Each miniature has a real ancestor. Collins hunted far and wide for these, gathered scattered parts, consulted manufacturers' plans so his models would be faithful reproductions of the originals which once traversed the dusty roads and cobbled streets of the past century.

Photos of a few of the models are shown here. No. 1 is a New England road coach, No. 2 the Pennsylvania Conestoga wagon, No. 3 a governess cart in which the children rode and No. 4 a dump wagon with swing bottom. Collins photographed the wagons to appear actual size by placing them on a dirt driveway close to his camera with the natural setting of trees, bushes, etc., in the distant background. •

Photos from Horse Power Days by Ivan L. Collins

Published by Stanford University Press





Master Puppeteers

BIL and Cora Baird have a job with strings attached—very many strings which animate the hundreds of puppets which appear on TV screens throughout the country when their show "Whistling Wizard" is on the air.

The Bairds make and repair their dolls, write scrips, rehearse and make movies in their combination warehouse-workshop-home in Manhattan's upper West Side. It was originally a coach house but now is a hotel and hospital for some 700 puppet characters. The only real trouble they have with their actors, however, occurs when strings break or tangle during a performance. These are trying moments for the puppeteer but the weird antics of the stringless actor amuse the audience.

During a show a script machine, center foreground in photo above, gives the puppeteers their lines. In Photo 1, Bil selects a head with the correct facial expression. The Bairds assemble a diver and mermaid in Photo 2 and in Photo 3, J. P. examines the Pearl of the Pale Moon as Heathcliff the horse and Minnie look on. •

Announcing WINNERS OF MI's

FIRST PRIZE

And what a prize! A beautiful '53 Dodge Meadowbrook Club Coupe like this one went to the lucky winner.

FIRST prize in MI's 2d Old Automobile Contest—a brand-new six-cylinder Dodge Meadowbrook Club Coupe Special—has been won by Halbert F. Speer of Cambria Heights, N. Y., whose suggestion for "A Practical Method of Reducing Automobile Accidents in the United States" won him the top award over several hundred other contestants who also named correctly the 12 old cars shown on the facing page.

Mr. Speer's winning proposal calls for a much stiffer, obstacle-type test for new drivers, coupled with a periodic re-exam of all drivers. Like the majority of entrants in the contest, he feels that the major cause of accidents is the man behind the wheel, rather than unsafe cars, bad roads or other external factors.

Second prize, a check for $200, went to Jack Cern of Arlington, Texas, who thinks a Federal Traffic Commission, set up to enforce a nation-wide system of laws and penalties governing the operation of motor vehicles, would eliminate the confusion caused by our present state system and help reduce the huge traffic toll.

The third prize winner of $100, Thomas E. Lowery of Columbus, O., believes we should disqualify the "accident prone" driver and suggests we could do it by setting up the same kind of safety commissions employed by various states to reduce accidents in industry. The suggestion which won fourth prize of $50 for S. W. Dalrymple of Wellesley Farms, Mass., envisions a well-organized safe driving educational campaign which will use all the modern media of information to hammer home its message.

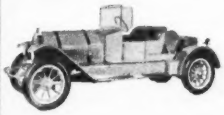
Winners of the other six prizes, $25 each, proposed regular check-ups to weed out the physically and emotionally unqualified, a system of compulsory automobile inspection and liability insurance, better driving instruction, stricter tests, uniform laws and a method of improving highways.

To Mr. Speer and the other winners, our heartiest congratulations. And to the many thousands of contestants who tried hard but didn't win a prize, thanks for your entry—and better luck next time! •

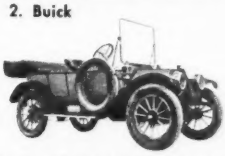
2d OLD AUTOMOBILE *Contest*

OFFICIAL SOLUTION

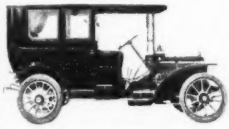
1. Thomas Flyer



2. Buick



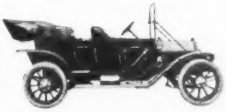
3. Packard



4. Oldsmobile

5. Chevrolet

6. Firestone-Columbus



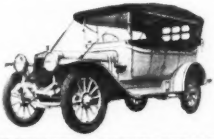
7. White Steamer

8. Pierce Motorette

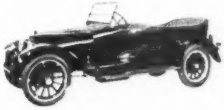
9. Ford

10. Cunningham

11. Winton



12. Owen Magnetic



THE WINNERS

First Prize—'53 Dodge Meadowbrook Club Coupe

Halbert F. Speer
116-03 Nashville Blvd.
Cambria Heights 11, N. Y.

Second Prize—$200.00

Jack R. Cern
701 South Collins
Arlington, Texas

Third Prize—$100.00

Thomas E. Lowery
1056 Mulford Rd.
Columbus, Ohio.

Fourth Prize—$50.00

S. W. Dalrymple
59 Boulder Rd.
Wellesley Farms, Mass.

Fifth Prize—$25.00

Glenn Allen Marshall
Rt. 4, Box 1055
Lakeland, Fla.

Sixth Prize—$25.00

Lloyd Westbrook
18 Lincoln St.
New Haven 10, Conn.

Seventh Prize—$25.00

Clarence P. Pickering
560 Westminster St.
Providence 3, R. I.

Eighth Prize—$25.00

Ronald Kubit
707 Pennsylvania Ave.
La Porte, Ind.

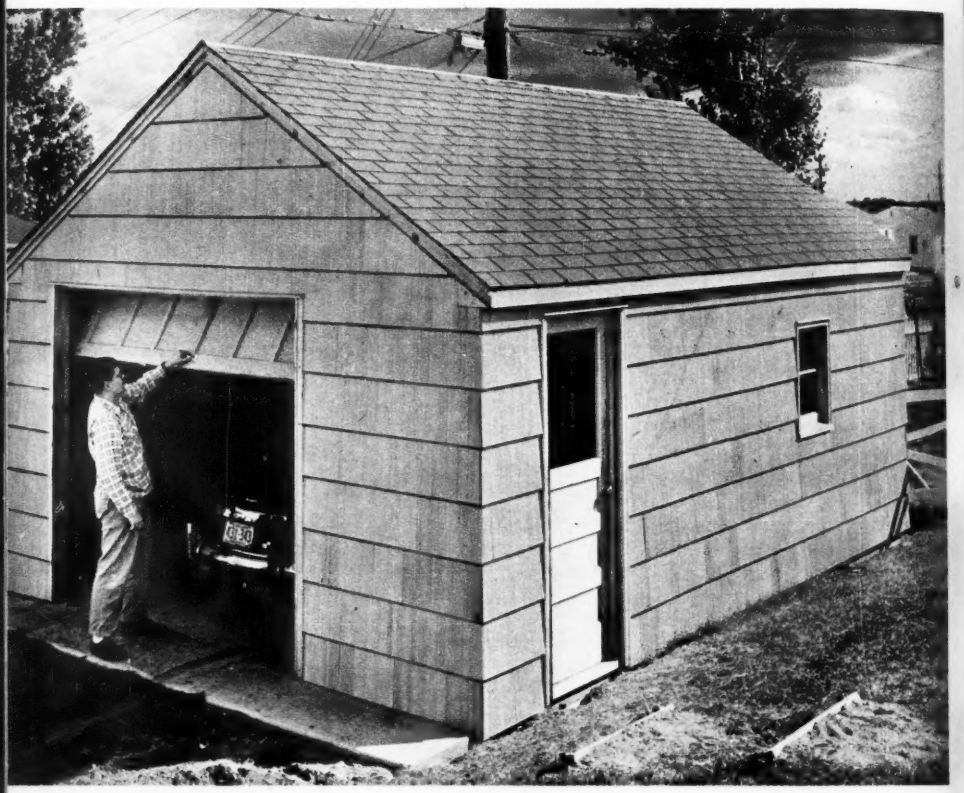
Ninth Prize—$25.00

Lowell Hecking
3401 Rubin Dr.
Oakland 2, Calif.

Tenth Prize—$25.00

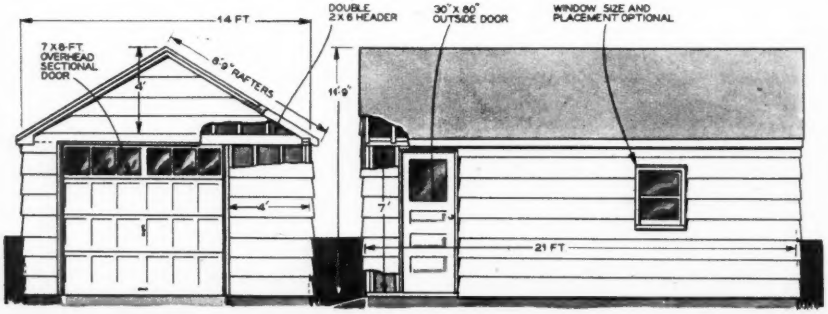
Richard Menke
Box 704
Jordan, Minn.

Build Your Own Garage



MANY houses are being erected today without garages. If you own such a home, you can build your own garage. It isn't difficult work and you can save 50 per cent or more in carpenters' fees. The cost of the materials for the garage shown here was $500. This figure needn't have been so high, but the owner went first class all the way. Rather than selecting a one-piece overhead door, he chose to install a four-piece sectional job. He included movable sash and purchased Grade 1 lumber.

Measuring 14x21 ft., the garage has been designed to house one car and to have space left over for storage and for a work-

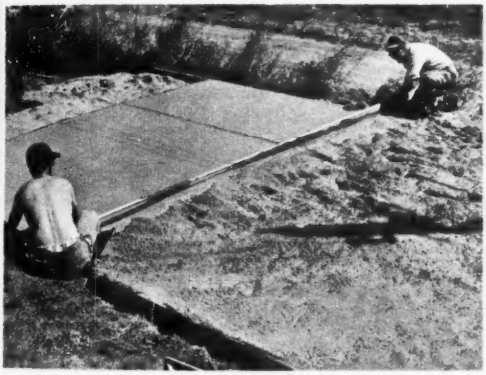


Garage, home workshop, and storeroom are all neatly combined in this utilitarian yet attractive little structure.

Special 42-page section devoted to home maintenance, repairs and modernization.

Carefully level the site and frame it in with form boards to hold concrete when it is poured. Stakes just outside the form boards hold them in place.

Ready-mixed concrete is fast and easy to pour. Spread the concrete inside the form boards with a rake and a shovel. Remove all air pockets.



Using a saw-like motion, work a length of 2x4 back and forth across the form boards. This is called screeding and it gives a level surface.

Lay a couple of roof boards across the leveled concrete to make a platform from which to work; then carefully smooth the surface with a trowel.

You'll save time and muscles if you frame each wall section on the slab and then, with the aid of a neighbor, lift the entire wall into place.

Notch each rafter to fit snugly over the plate. The desired roof pitch determines the angle of these notches. Erect rafters a pair at a time.

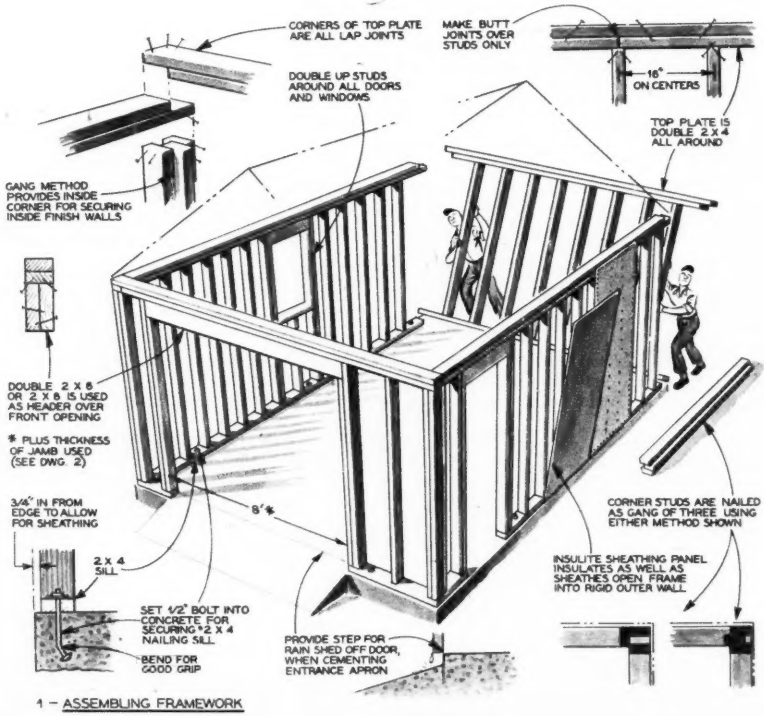
When toenailing the rafters to the ridge pole, check ridge often to make sure it remains level.

Secure roof boards to rafters with two nails per board per rafter. Stagger the butts in the boards.

bench. To duplicate it, the first thing to do is to order the supplies listed in the accompanying bill of materials.

The second job is to get the site ready for the slab. The soil should be level, well drained, and packed down. Stake out the corners, leaving an extra 24 in. if desired for a concrete apron. Run cords between the stakes. A line level will help tell you if your cords are level. Then put in form boards—2x8s do a good job for a 4 or 6-in. slab. Drive stakes outside the forms to hold them in place. Be sure the stakes don't stick above the form boards—otherwise they will slow down the screeding process once the concrete is poured. Check the forms to be sure they are level and use sand or gravel fill if needed. The important thing about the fill is that it must readily drain off water from the concrete.

A 4-in. concrete slab was poured for this garage. Ready-mixed concrete was used, making for a much faster and easier operation. A rake and a shovel are all the tools you need to spread the concrete inside the forms. After spreading, jab the shovel blade into the concrete at frequent intervals to make sure all air pockets are removed. Then put a neighbor or friend on one end of a 2x4 that will extend across the newly poured concrete and, with yourself on the other end, work the 2x4 back



1 – ASSEMBLING FRAMEWORK

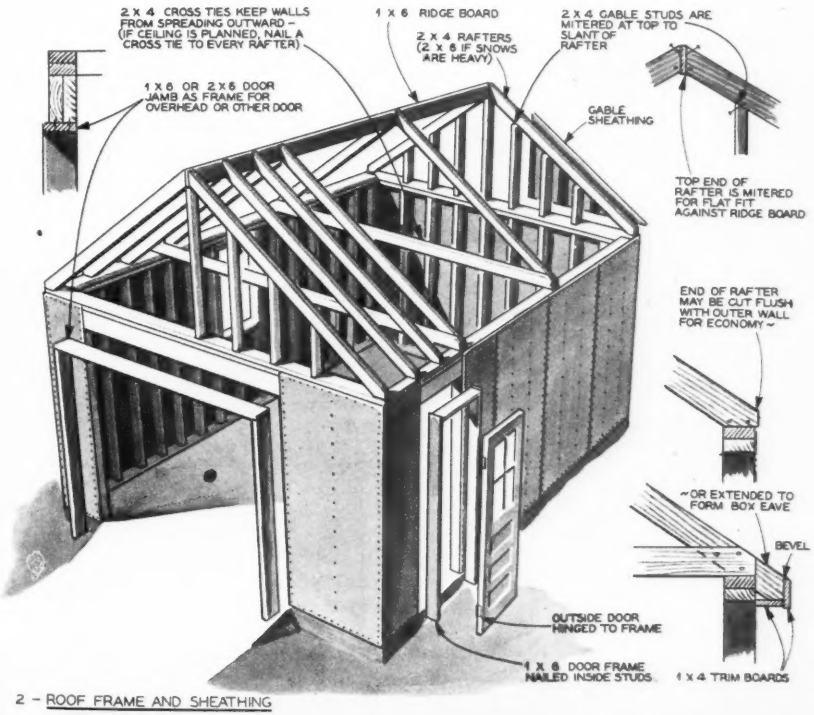
Sheathing 4 ft. wide covers three stud spaces when framing is on 16-in. centers as it is here.

Apply roof shingles over 15-lb. felt; allow to overhang at eaves and gables to form drip edges.

and forth in a saw-like motion. This is called screeding and gives a level and fairly smooth surface that is ready for troweling. A couple of roof boards laid across the cement make a good platform from which to trowel. After the surface is troweled and the apron is tapered the way you want it, set in the anchor bolts as shown in an accompanying drawing. Cover the newly troweled slab with gunny sacks or the like and keep damp for several days.

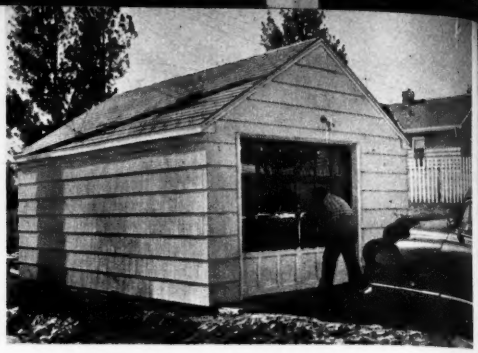
After the slab has cured, go ahead with the framing. You'll save time and muscles if you frame each wall section on the slab, using 16d nails for fastenings. Then, with the help of a neighbor, lift the entire section into place. Our garage is framed with studs on 16-in. centers. This is necessary for correct application of the sheathing, Shingle-Backer, and shingles. Use a 2x4 or a roof board to brace the first section and, while your neighbor helps steady the section, put the nuts on the anchor bolts and tighten down. Then frame the other sections, proceeding in the same manner. Don't forget to frame the windows and service door as shown in the plans.

When you have all of the wall sections bolted to the slab, run ceiling joists between the side walls, toenailing them to the plates with 10d nails. A 2x4 joist every 48 in. is sufficient. They offset the out-



2 - ROOF FRAME AND SHEATHING

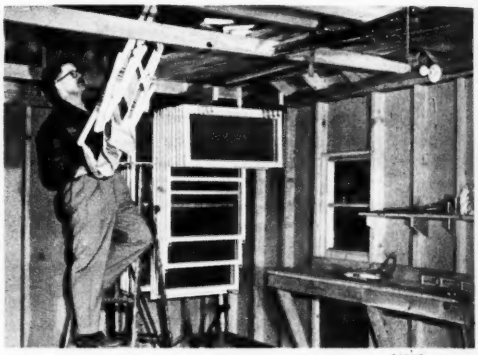
Use board as guide when putting Shingle-Backer panels and exterior side-wall shingles in place.

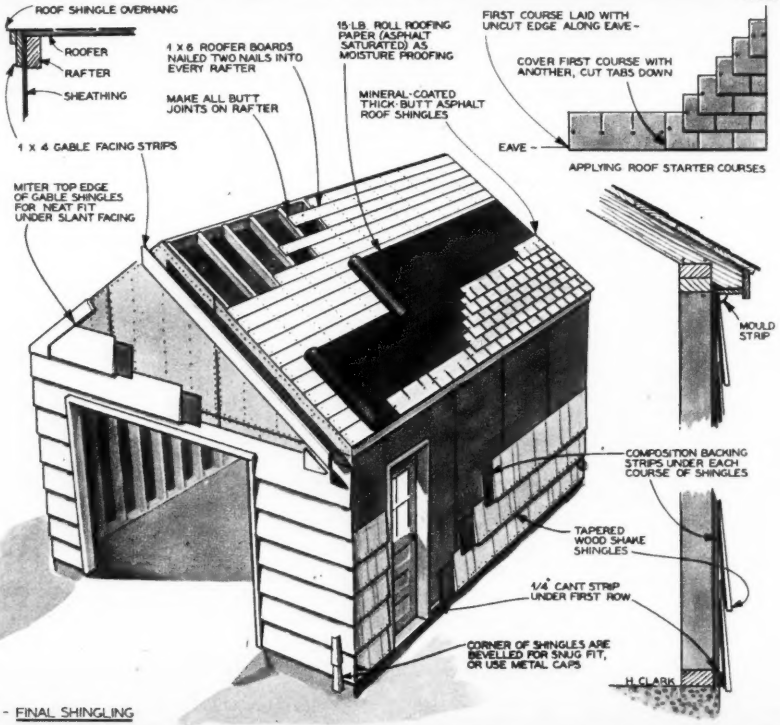


Shingles need no paint, but be sure to finish windows, doors, and trim with a top-grade paint.

Shelves in corner hold a variety of materials. For details, see the drawing on opposite page.

Also detailed on opposite page is the workbench shown here. Note how screens are hung on hooks.





3 - FINAL SHINGLING

ward thrust of the roof. The top edges of the joists are cut off flush with the top edges of the rafters once the rafters are in place.

The desired roof pitch determines the angle at which to cut the rafter ends. The pitch also determines the angle of the notches to get 3-in. contacts with the plates. Put up front and back rafters first, using 2x4s. Their sides should be flush with the outer edges of the front and back plates. The top edge of each rafter should be level with the top of the ridge pole. Toenail each rafter to the ridge pole with 8d nails, then secure the other end to the plate with 16d nails. Put the remaining rafters up, a pair at a time, checking the ridge pole occasionally as you go along to make sure it remains level.

Apply the bottom roof sheathing board so that it extends over the ends of the rafters far enough to cover the eave facing strips. The roof boards are secured to the rafters with 8d nails—two nails per board per rafter. Stagger the butt ends so the butts in two adjacent boards don't fall on the same rafter. For cutting off overhanging roof boards, a hand power saw saves much effort and time. If you don't already have one, you can rent it.

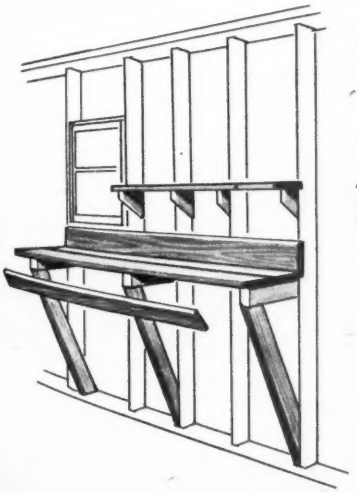
Sheathing in sheets 4 ft. wide covers three full stud spaces when framing is on 16-in. centers as it is here. The sheathing is marked to indicate where nails should go—every 3 in. on outside edges and every 6 in. on intermediate studs. The 1¾-in. galvanized roofing nails or 8d common nails should never be closer than ⅜ in. to any edge.

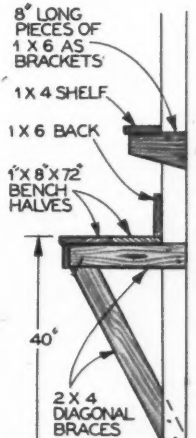
The 1x4 eave trim board should be planed on the top edge so that it fits snugly up against the overhanging roof board. Nail this trim to the rafter ends. It should extend down below the rafters so that it covers a second, horizontal trim board called a plancher. Butt the plancher against the sheathing and nail it to the rafters.

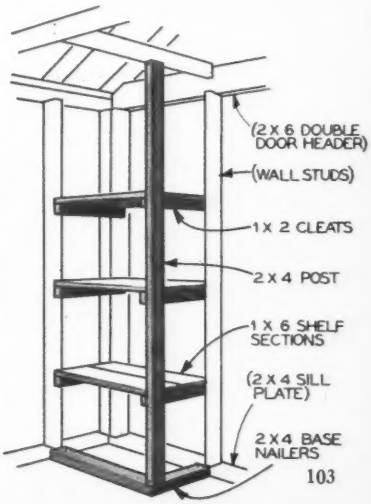
Use a piece of shiplap or a spare roof board as a guide when putting the Shingle-Backer panels and the exterior shingles in place. Apply Shingle-Backer with its end joints centered on studs. Fasten with 8d galvanized box nails, placing a nail at the bottom of each panel at each stud so that the nail goes through Shingle-Backer and sheathing and anchors in the stud. Secure the exterior [*Continued on page* 177]

BILL OF MATERIALS

Quantity	*Material*
650 bd. ft.	2x4 dimension lumber
28 bd. ft.	2x6 dimension lumber
72 bd. ft.	1x4 strips
387 bd. ft.	1x8 boards
10 bd. ft.	1x2 strips
11 bd. ft.	1x6 strips
42 lin. ft.	¾" quarter round
14 lin. ft.	outside casing
9 lin. ft.	drip cap
550 sq. ft.	Insulite Bildrite sheathing (4'-0"x8'-0")
600 sq. ft.	Insulite Shingle-Backer (15½"x48")
6 squares	18" processed shakes
3½ squares	210-lb. asphalt shingles
1 roll	15-lb. felt
1	overhead door
1	slip-head frame and sash
1	window (two-light, 12"x18")
20 lin. ft.	stops and outside casings
1	1⅜"x2'-6"x6'-8" glazed door
20 lbs.	16d common nails
20 lbs.	8d common nails
8 lbs.	1" galvanized roofing nails
7 lbs.	annularly grooved nails







"About this big." Buying lumber this haphazard way usually results in wrong quantity or lower quality at a greater expense.

LUMBER

Some pertinent facts that will help when ordering a supply for future workshop or construction needs.

It should fit but it doesn't! A piece of board ordered in a 12-in. width sometimes proves to be only 11½-in. due to shrinkage and planing.

"GIMME a piece of board about so big." Is that the way you place your order for lumber? Or, do you say, "Let me have a 12-ft. length of 1x12-in. dressed, grade A shelving." If you don't know how to order wood simply because you don't know exactly what you want, you'll find yourself buying a board too small, too big or of poor quality—and then you may have to reorder, a bit wiser but a bit poorer.

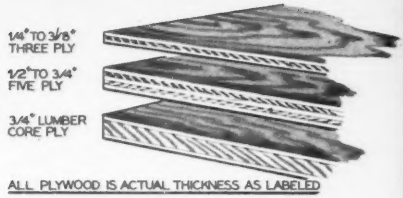
Do you know, for example, that a 2x4 actually measures 1⅝x3⅝? That a piece of board you order in a 12-in. width may be only 11½-in. wide? Getting a board and then finding when you bring it home that it is a full ½-in. short may mean that you cannot use it as planned, a total waste of your time, effort and money.

Here are some common board sizes, together with their actual measurements. The drawings will also help you to get a better understanding of lumber sizes and designations, so study them, too.

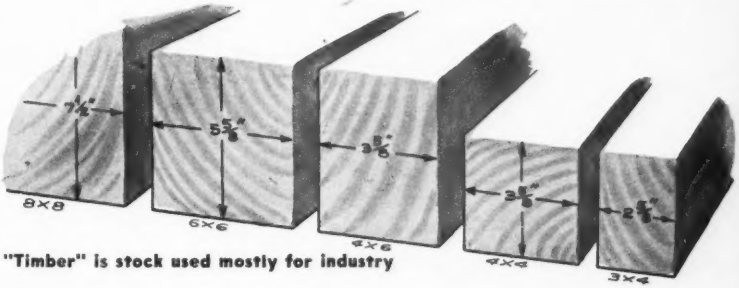
[*Continued on page* 166]

Plywood measurement labels mean what they say, but sizes of other dressed boards differ from their labels.

"Five quarters" board

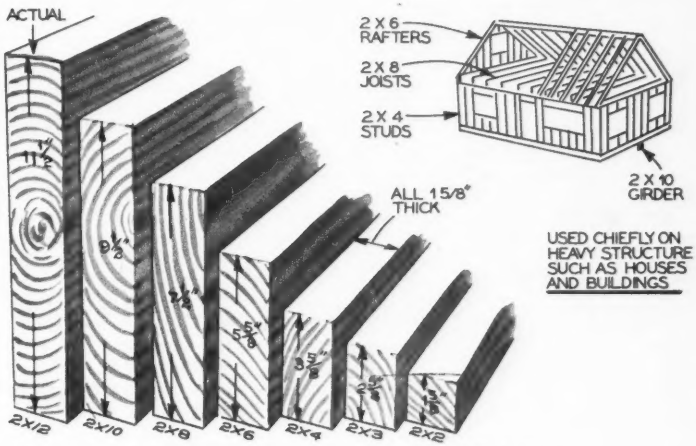


Timber stock is usually available in lengths from 4 to 24 ft. Actual size varies from listed, as shown in drawing.



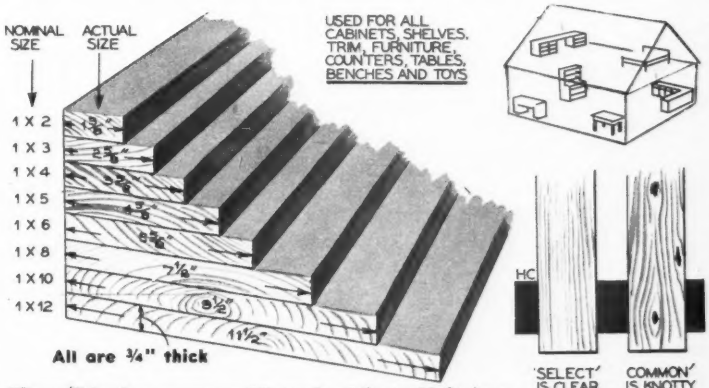
"Timber" is stock used mostly for industry

Dressed sizes of dimensional lumber vary considerably from labeled sizes, an important factor when planning construction of large projects like homes.



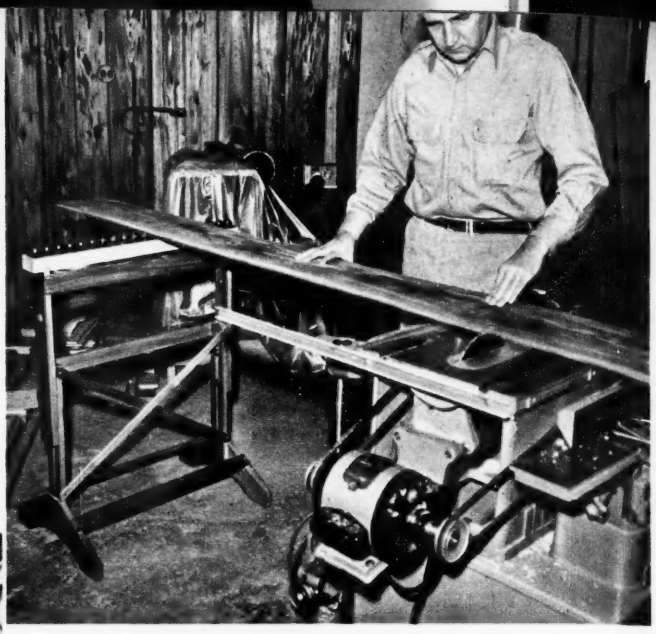
"Dimensional" lumber comes as 2" stock—4 ft. to 20 ft. long

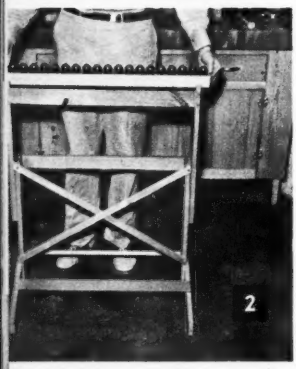
Because of the need for exactness in finishing use, always order board lumber with the difference between listed sizes and your job requirements well in mind.

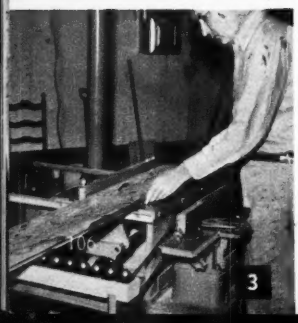


"Board" lumber comes as 1" stock—4 ft. to 20 ft. long

The Third Hand

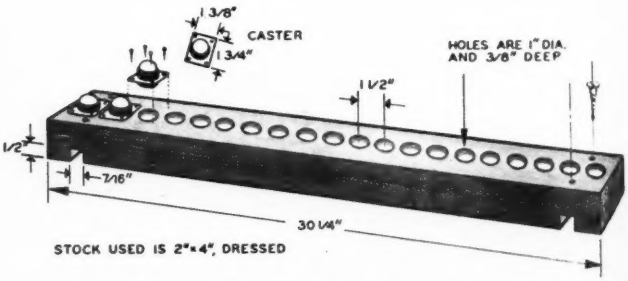






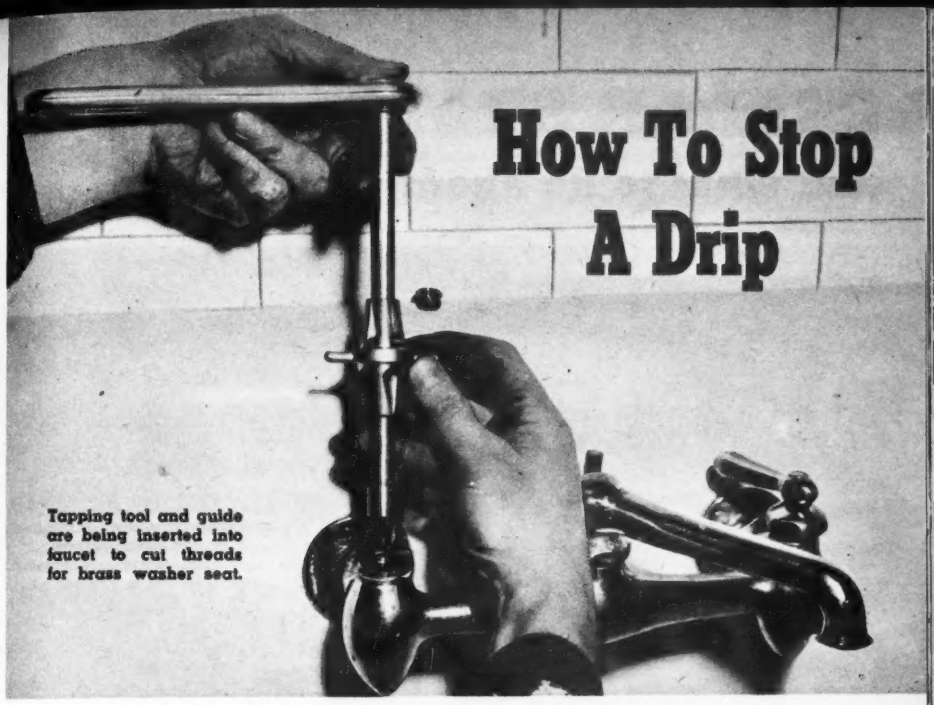
MANY'S the time I wished I had a third hand to steady the wobbly end of a long board I was trying to rip or crosscut on the circular saw. After fumbling around with a variety of unsatisfactory makeshifts, ranging from a fixed-height saw horse to the wavering paws of the kid next door, I decided to devise an adjustable extension-support which would always be available whenever I needed it.

Most home-made devices I have seen use a wooden roller fastened to the top of an adjustable frame of some kind. This roller works smoothly when you're ripping wood but drags against the lumber when you're crosscutting. So instead of a roller I used large (1⅛″ dia.) ball-bearing casters, countersunk into the cross piece and closely spaced so as not to trip the lumber as it slides across them. A discarded drawing board base provided a ready-made, adjustable frame. Total cost of the 20 casters, from the Schatz Mfg. Co. of Poughkeepsie, N. Y., was under $7.—*Bill Parker.* •



In a 2x4 cross piece (Photo 1 and drawing above) bore holes just wide and deep enough to take the casters snugly. After making a dado cut at either end, tack casters in place with small nails or screws and fasten to frame (2). Adjust The Third Hand to height of saw table and get down to work (3).

How To Stop A Drip

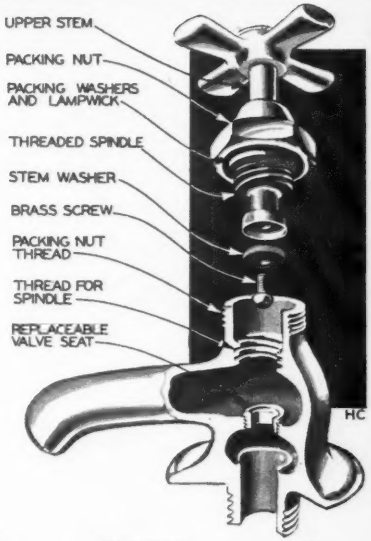


Tapping tool and guide are being inserted into faucet to cut threads for brass washer seat.

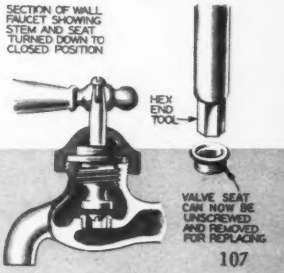
If a new washer stops a leaking faucet temporarily, the answer is a new washer seat.

EVER meet up with a recalcitrant, balky faucet washer that literally chews up washers as fast as you insert them? The obvious remedy is of course a new faucet fixture. Fine, but if you have a number of such faucets in your house, this can really run into money. The remedy is a new faucet seat. The Economy Valve Seat Co. of Chicago has turned out a kit especially designed for the home owner. It consists of a set of taps, dressing tools and seat inserts to fit practically all the faucets in the average home.

Here's how it's used. [*Continued on page* 162]

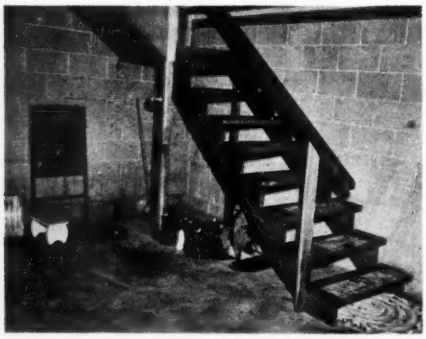


Repair kit is shown below. At right is close-up of wrench, guide and tap, dresser, seating tool and the brass seats.



CELLAR STAIRWELLS
and what to do about them

Before and after pictures of Robert H. Hawkins' handiwork appear below and above. He installed coat and storage closets underneath his stairs.



ONE of the first projects commonly undertaken by young, forward-looking homeowners is the conversion of their basements into all-purpose rooms. Of the many problems encountered in planning such a conversion, perhaps the most perplexing is what to do with the cellar stairs and the space under them. Three solutions to the problem are shown here.

The first conversion is the handiwork of Robert H. Hawkins of Morton, Ill. Using knotty pine and plywood, he constructed a coat closet and a storage cupboard under his stairs. One of the accompanying drawings gives a general idea of how this par-

That waste space under your cellar stairs serves no useful function. Here are details from three craftsmen on how to convert it into an attractive storage area or study center.

Below: Clarence A. Martin's cellar looked like this before he set to work. Above: Now he has a storage cupboard and a convenient work area.

ticular conversion was effected. No dimensions are shown, so it is a simple matter to adapt any or all of the ideas to fit your cellar.

To begin, saw the protruding ends of the treads off flush with the stair horse. Then cut risers to fit the backs of the steps and nail them in place. Don't try to cut the risers all at once—some fitting is usually required at each step.

Start the paneling at the place requiring the longest boards and use the short stuff that's left over at the lower end of the stairway. The cupboard door measures 22x36 in. The coat closet is separated from

the storage space by a partition of ⅛-in. Masonite or ¼-in. plywood. A clothes pole 1¼ in. in diameter is installed as shown and coat hooks are placed on three walls. The door to the coat closet is mounted on a 2x4 that is fastened to the wall with wood screws driven into masonry plugs.

One or two coats of cement paint are applied to the masonry walls. If two coats are used, follow the manufacturer's directions carefully. They usually specify that the second coat should be applied within 24 hours of the first.

The overhead joists are covered with 16x16-in. ceiling blocks. These just fit the standard 16-in. joist spacing. If the joists aren't level, furring strips will be needed. Make these from 1x8-in. lumber, ripping it into 1x2½-in. strips and nailing the strips across the joists on 16-in. centers. Secure the ceiling blocks with plenty of nails.

Asphalt tile is laid on the floor. Most of the tile manufacturers have instruction sheets that are surprisingly easy to follow. Remember that only asphalt tile can be used on concrete floors. Don't try rubber, linoleum, or plastic tile—you'll be disappointed with the results. The fact that you should let the tile cement get really dry before applying the tile can't be emphasized too much. *Don't hurry it.* If you do, the cement will eventually work its way up through the cracks and then you will really have a mess.

Use asphalt tiles also on the stair treads. Because the tiles may creep or slide, some means of anchoring them in place—in addition to the cement—is needed. A quarter-round strip holds the tiles at the back of each tread and a metal stair nosing that screws in place secures them at the front.

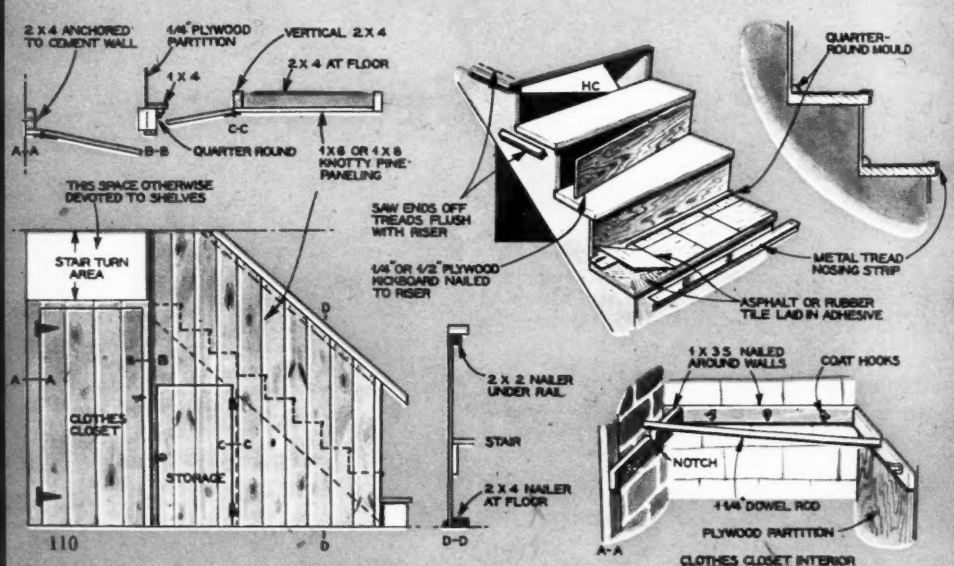
The second conversion was executed by Clarence A. Martin of Brooklyn. He employed part of the space under his cellar stairs for storage and the other part for a study center. He advises anyone who wants to duplicate his effort to draw scale plans before the work is started. Accurate preliminary work of this sort results in a saving of time, energy, and money.

Random-width tongue-and-groove pine, such as Martin used, can be given beveled edges by running it through a circular saw that has a hollow-ground blade. The hollow-ground blade makes such a smooth cut that only a small amount of final sanding is necessary. Set the blade at an angle and use a hand screw to guide the work as it leaves the saw, thereby assuring a straight and uniform cut.

If you have a belt sander, smooth all of the paneling before you put it up—work that's horizontal is much easier to sand than work that's vertical.

The dadoes in the two bookshelf end sections are best made with a dado head in a circular saw. If the dadoes must be made by hand, cut saw kerfs to establish the width and depth of the dadoes and then chisel out the wood between the kerfs.

Simplicity and neatness are the outstanding features of Robert Hawkins' conversion.



Beveled edges can be cut on T&G boards with hollow-ground blade set at angle in a circular saw.

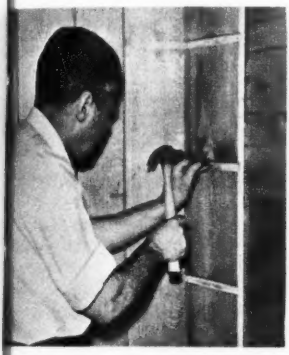
Horizontal furring strips keep boards rigid. Brads driven in board tongues are not visible.

Hang compartment door on 3-in. butt hinges. Brass drawer pull makes an excellent door handle.

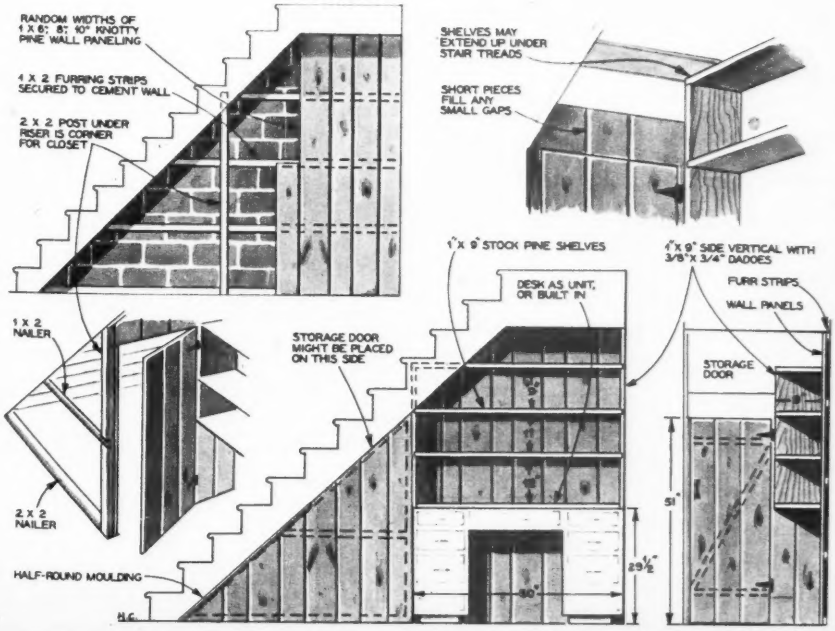
Dadoed end sections support the shelves. Brads driven into the dadoes are hidden by shelving.

Nail moldings over cracks and poor joints to dress up work. Set nail heads below surface.

Beautiful finish is obtained by using two coats of Minwax and a coat of paste wax, then buffing.



Clarence Martin's project includes pine paneling, bookshelves, and a closet.



Harry W. Keck erected 2x2-in. furring strips on 16-in. centers as the first step in creating an all-purpose room in the basement of his house.

Staircase framing is also 2x2-in. stock. Note square framework in center. It's for the door leading to the under-stairs storage compartment.

Before applying the paneling, be sure to install enough horizontal ¾x2-in. furring strips over the studs to make the job rigid and to help prevent later warping or winding. These strips should be spaced no more than 16 in. on centers. Brads toenailed through the paneling tongues and set down beneath the surfaces will not show. Relieve the monotony of the paneling by varying the board widths, but follow some kind of a system. A pleasing combination is 6 in.-8 in.-6 in.-10 in., repeated as much as possible.

The door has the same combination of widths. Cut it to size and hold the boards together with Z shaped bracing. Screws driven through the braces into the boards will not show on the outside. Hang the door on a pair of 3-in. butt hinges and keep it closed with a ball-type friction catch. A brass drawer pull makes a good door knob.

Fasten the bookshelf end sections in place with brads driven through the dadoes. If the bottom shelf is planned so that it is exactly the same height as your desk, the area of the work surface will be increased by a good deal. If measurements have been made correctly and everything is square, the shelves will slide easily into place. But they probably will not, so you had better plan on a little fitting. A wood rasp will take off the end grain of the shelves much faster and easier than a plane will.

Add half-round and quarter-round moldings as desired to seal cracks, conceal poor joints, and dress up the job. Fasten the moldings in place with brads or finishing nails, set the nail heads below the surface, and fill in the holes with beeswax, colored putty, or plastic composition wood.

The finish can be whatever suits your fancy. That applied to this job was Minwax Puritan Pine. Two coats were used and a beautiful satin finish was obtained with paste wax and a buffing bonnet. Another simple but excellent finish is white shellac that has been slightly colored with orange shellac. Apply several coats, polish the final coat with 3/0 steel wool loaded with paste wax, and buff when dry. Flat varnish is also a good finish.

The third conversion was effected by Harry W. Keck of Berwyn, Ill. Salesman Keck's basement now serves as his home office and as a center for neighborhood parties. Later, the Keck's baby daughter will use it as a playroom and eventually as a recreation area for herself and her school friends.

Keck set aside half the basement for this room, closing off the furnace and laundry areas. He covered the walls and ceiling completely so there would be no resemblance to a basement. About 80 hours were spent on the conversion, which cost $179. Besides making usable a space that previously had no function, the improvement considerably increased the value of the house.

For the walls, Keck chose $\frac{3}{16}$-in. Masonite Tempered Presdwood. For the ceiling, he picked Masonite Panelwood in the same

Masonite is treated with water so that movement due to moisture changes in cellar is minimized.

As nailing of ceiling panels proceeds, each panel is held in place with rake-like prop.

Doors leading to under-stairs storage are framed with furring strips, covered with Masonite.

thickness. The wall panels, 4 ft. wide, were fastened to 2x2-in. furring strips that were installed on 16-in. centers. He cut the ceiling panels into 4x4-ft. squares. V-shaped bevels were planed on the edges of all the panels. (Instead of a plane here, Keck could have used a file, sandpaper, or a beveling tool.)

The biggest job was drilling the holes in the concrete for the insertion of the plastic masonry plugs that took the 3-in. No. 10 wood screws which held the furring strips in place. Keck used a carbide-tipped $\frac{3}{16}$-in. masonry drill for this chore, which enabled him to complete the three holes required for each furring strip in a half hour.

Because the ceiling joists were out of true, Keck installed 1x2-in. furring strips across them, on 16-in. centers, to take the Panelwood squares.

Before securing the Masonite panels in place, he conditioned them so that movement due to moisture changes would be negligible. In his garage, he scrubbed the back, or screen side, of each panel with cold water, applying it with an old broom. He next stacked the panels, with newspapers between the layers, and covered the stack with an old canvas for 24 hours. Then he installed the panels while they were still damp.

The ceiling panels went up quickly. As the nailing proceeded, each panel was held in place with a rake-like prop resting on the floor. The wall panels followed. Fastenings throughout were 4d casing nails. Following instructions he received with the Masonite, Keck fastened each panel in the middle and then progressed to the edges. At the joints, the panels were brought into moderate contact.

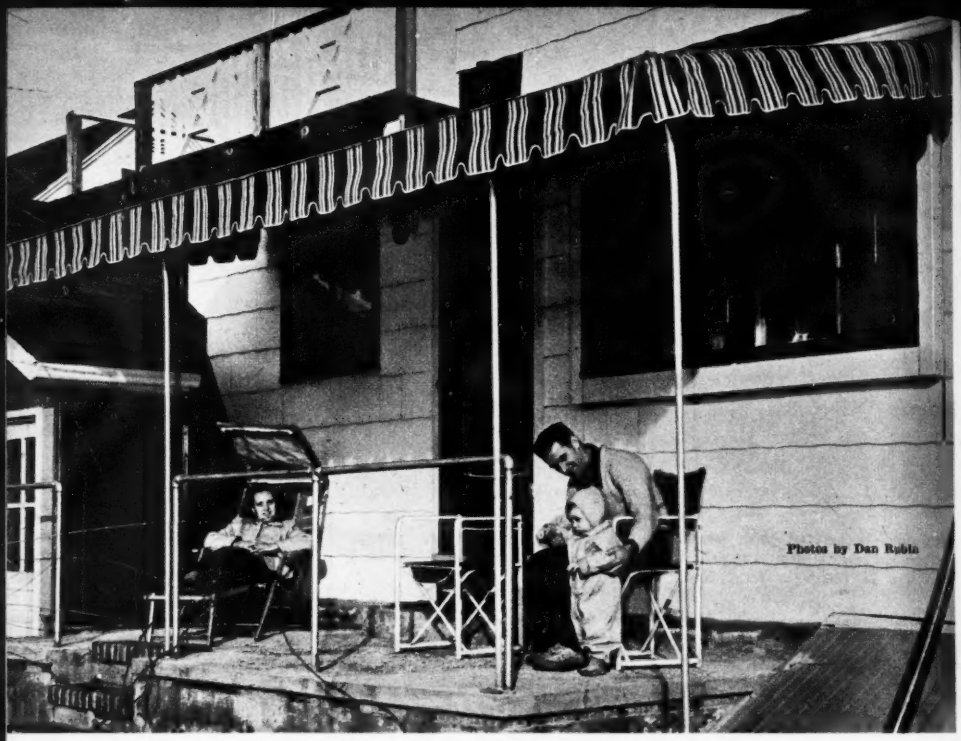
Cove moldings were installed in the corners of the room and along the joints between walls and ceiling. Pine strips, ½x2½ in., were used for base moldings.

For appearance and safety, Keck enclosed the stairway. He removed the old railing, installed 2x2-in. furring strips, and then covered the furring strips on both sides with Presdwood. When installing the furring strips, he framed a door opening for a storage compartment under the stairway. On the side of the furring toward the stairs, he carried the bottom edges of the panels down far enough so they lapped the top of the stair horse. He therefore had no special fitting to do around the treads and risers. On the basement side, he extended the panels to the floor.

The two doors to the storage space were framed with 2x2-in. stock and covered with left-over wall-panel material.

The window recess in the new room was lined with Presdwood fastened to furring strips. The doorways into the laundry and furnace rooms were framed with furring strips and faced with 1x4-in. stock.

Tung oil was used to seal all of the Masonite. The floor and the part of the chimney that extends into the new room were finished with a coat of gray deck enamel, which contrasts nicely with the dark Masonite. •



Terrace Awning

By Henry Clark

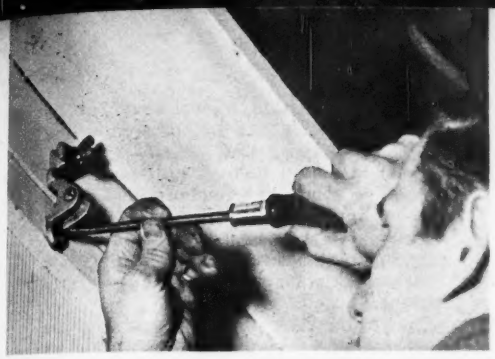
A TERRACE in the back yard is a desirable area for privacy, relaxation, play, and entertainment. However, after one or two summers of idling on your terrace with the sun beating down, you'll realize that shade of some sort ought to be provided. After considering the use of trees, hedges, trellises, arbors, and various overhead structures, the terrace awning is the only logical answer, for it provides complete shade and permits both an unobstructed view and free traffic in all directions. The awning shown here is simply a single thickness of durable Army duck, in any of a variety of colors and patterns, stretched across a support made from a few slim lengths of galvanized pipe.

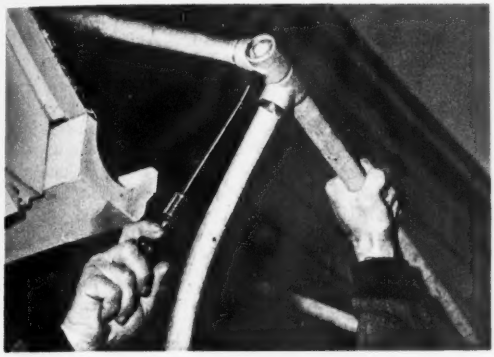
Since the terrace is usually located next to the house, rigidity and a good downward slant are imparted to the awning by securing one of its edges to a 1x4-in. board screwed at the proper height on the house wall. The other three edges are lashed to lengths of ¾-in. galvanized pipe, which in turn are supported by ¾-in. vertical pipes that are bolted to the concrete of the terrace.

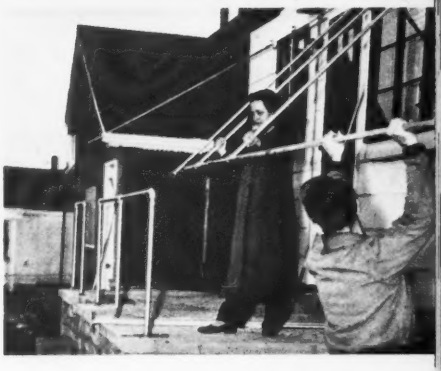
To approximate how much awning you need, measure the length and width of the area to be covered and add an allowance for the slant or pitch. Before buying the awning, construct the framework and take the final measurements from it. The frame is made from ¾-in. water-line pipe, which is available through all plumbing houses at about 20 cents per foot.

Measure for the height of the vertical posts that support the front of the awning. This height depends on how low or high you want your view. Don't forget to include the 10-in. awning flap in your calculations. The job shown here has 7-ft. posts, three of which can be cut from a standard 21-ft. length of pipe. All posts are threaded both ends; they receive slip tees at their tops and screw into flanges at their bottoms.

The lengths of the awning rafters are next determined by measuring the distance from the posts to the wall and allowing for

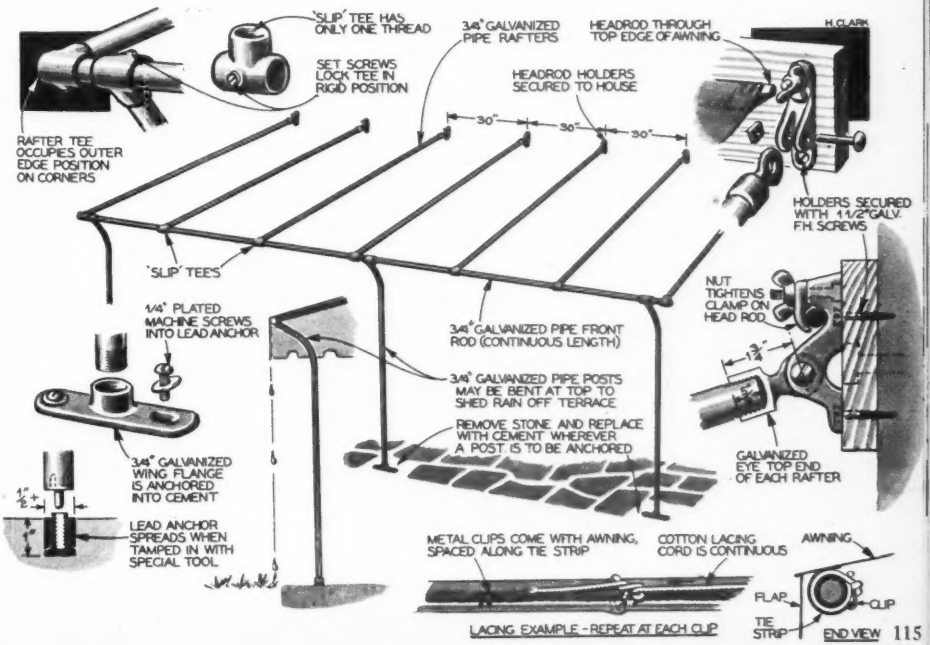


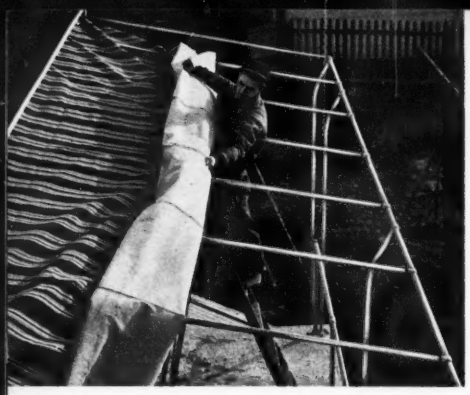




Top photo is a close-up of one of the head-rod holders that secure both the head rod and the rafter pipes. Bottom photo: The awning's front rod is secured by tightening slip-tee setscrews.

Top: The flanges are fastened to the cement by screws driven into lead anchors. Bottom: Make sure all setscrews are loose before pushing the front rod through the tees on rafters and posts.





When installing awning, secure the head rod and then pull awning over frame and lace in place.

the upward pitch. Each rafter is threaded both ends, receiving a slip tee at the front and an eye at the rear. Each eye is bolted to another fitting called a head-rod holder, a series of which are now screwed on 30-in. centers to the 1x4 on the house. These holders are also designed to take the head rod that runs through the top edge of the awning.

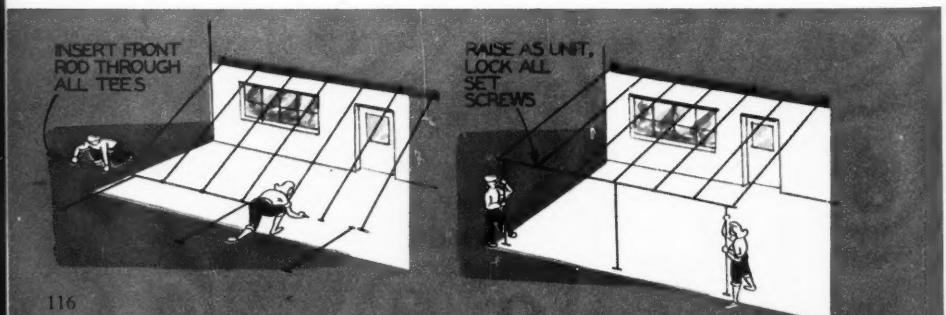
With all rafters attached at the top, run a slip tee on each bottom end. Note that each slip tee has a setscrew in the middle for locking. The head of this setscrew should be on the bottom of the tee to avoid scuffing the awning. Now run a slip tee on the top end and a flange on the bottom end of each post. Slip the awning's front rod through the tees on the rafters and posts. It takes a bit of tricky pushing, advancing tees, pushing, advancing tees, etc., until all are on and in their respective positions. The setscrews must be loose during this process. Lock the two end rafters onto the ends of the front rod and hoist the posts into position. Reach up and tighten the rafter setscrews 30 in. apart, thus assuring a rigid frame.

Space the posts for best support of the frame and mark the concrete under the flanges by making a pencil dot through each flange hole. Avoid placing flanges on flagstone since this material cannot be readily drilled for lead anchors. Move the flanges away and, using a ½-in. star drill, proceed to pound holes 1 in. deep in the cement. Drive lead anchors into these ½x1-in. holes and spread the anchors with a special punch, leaving the threads free to engage plated screws, which should now be driven, thus fastening the flanges firmly in place.

The framework is now ready to be measured for the awning. This can best be done by an awning contractor. He will allow for both shrinkage and a 10-in. flap. Tell him you want 10-oz. Army duck, which is the finest duck available and is highly mildew resistant.

When the awning is delivered, it will have a pocket along the top edge and flaps along the three other edges. Insert a ⅜-in. galvanized-steel head rod in the pocket, place the folded or rolled awning on top of the rafters, and pull the head rod up to the head-rod holders on the house. Working from a stepladder, go from holder to holder, tightening the clamps over the head rod. Pull the side and front flaps down until the awning is completely stretched over the framework, then proceed to lace as shown in an accompanying drawing. The awning contractor will give you additional advice if needed. If there is any appreciable sway to the frame, end braces can be driven into the ground to steady the posts.

You'll now have welcome shade from the sun. It will prove effective on even the hottest of days and, with care, should last for years and years. The awning should be put in place late in the spring of each year and should be removed for storage early in the fall. This prevents too much exposure to the heavy rains and hard winds of early spring and late fall. If desired, the framework can also be stored during the winter. Remove the bolts at the head-rod holders and unscrew the posts from the flanges. The whole frame can then be folded and tucked away in your garage. •



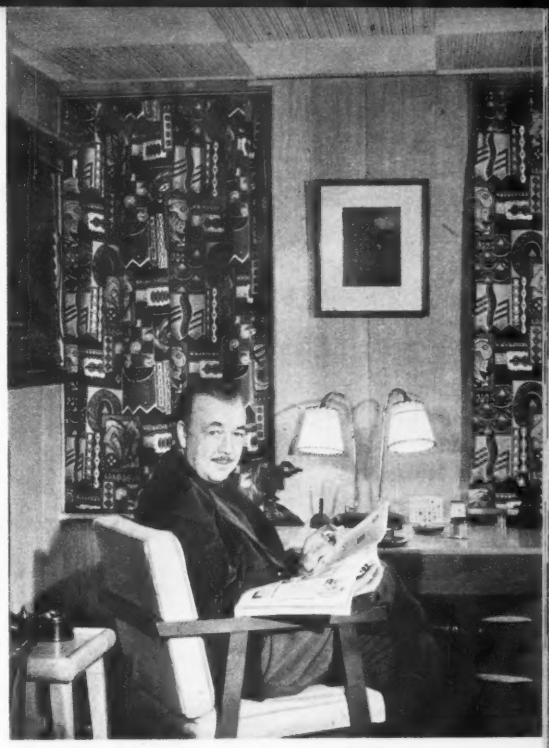
MOST PRACTICAL METHOD OF ASSEMBLING AND RAISING THE PIPE FRAMEWORK

Basement Penthouse

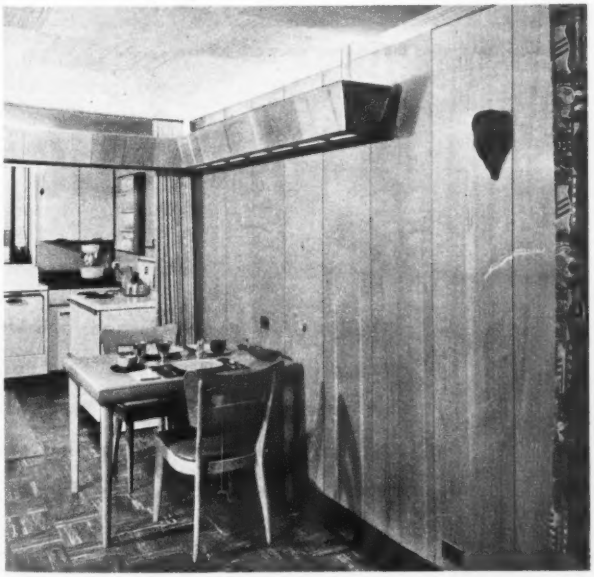
A veritable dean of home craftsmen, Norman Brokenshire practices what he preaches on his TV show in which he offers advice to all homeowners who get fed up with the expense of calling outside help for home renovations.

Deciding to put the basement of his home to practical use, Brokenshire tore out the battered plaster walls and ceiling. Installing the necessary wood framing, he applied plywood paneling to completely cover the walls and used Weldtex squares for the ceiling. Tiling was used for the floor.

Brokenshire, setting an example for other home craftsmen, has created an unusually attractive, livable basement penthouse from once neglected space.—*Robert Karen* •



Norman Brokenshire relaxing in his attractive basement "den." Note Weldtex squares used for ceiling.



Another view of the basement after conversion job was completed. Compare view with that of unfinished basement in photos at right.

Wooden T support holds ceiling panel in position for nailing.

The attic before (below) and after the conversion work (above).

Add a Room to Your Attic

You can add a smart, comfortable room or two to your home at a cost you can afford by doing the work yourself, except for the heating and electrical installation. Here's how.

By E. T. Erickson

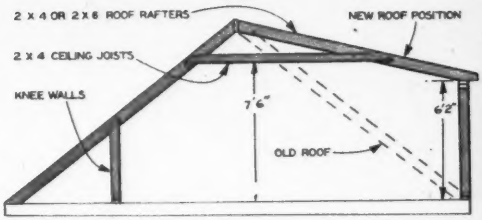
Photos Courtesy Insulite Division, Minnesota & Ontario Paper Co.

IF you have some ordinary carpenter's tools, some spare time and a bit of handyman ability you can easily convert your attic into one or two comfortable extra rooms. The cost should not exceed $1 per square foot for materials, excluding the small additional expense for utilizing skilled workmen to do the heating and wiring installation.

In this article I will tell you how I tackled the job on my own home. However, except for the dimensions involved, the work undertaken applies to any home so after reading the text and studying the photographs and drawings you should be able to do a good job on your attic.

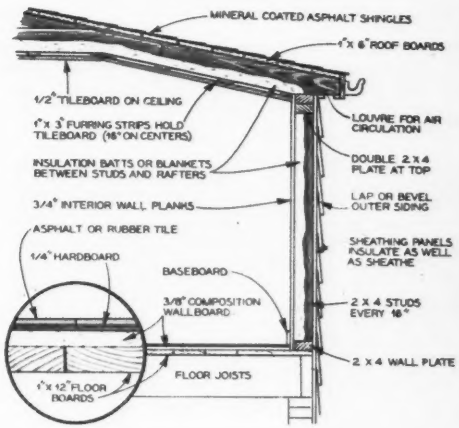
I started the job by tearing out two original small dormers and building a 24 ft. shed dormer with an outside wall 6 ft. 2 in. high, providing space for two large rooms. If your home does not feature dormers you will not have to worry about this part of the job, confining your efforts to interior framing, partitions, ceiling and wall planking. Drawings showing dormer construction details are included for the benefit of those who may find it desirable or necessary to undertake similar construction.

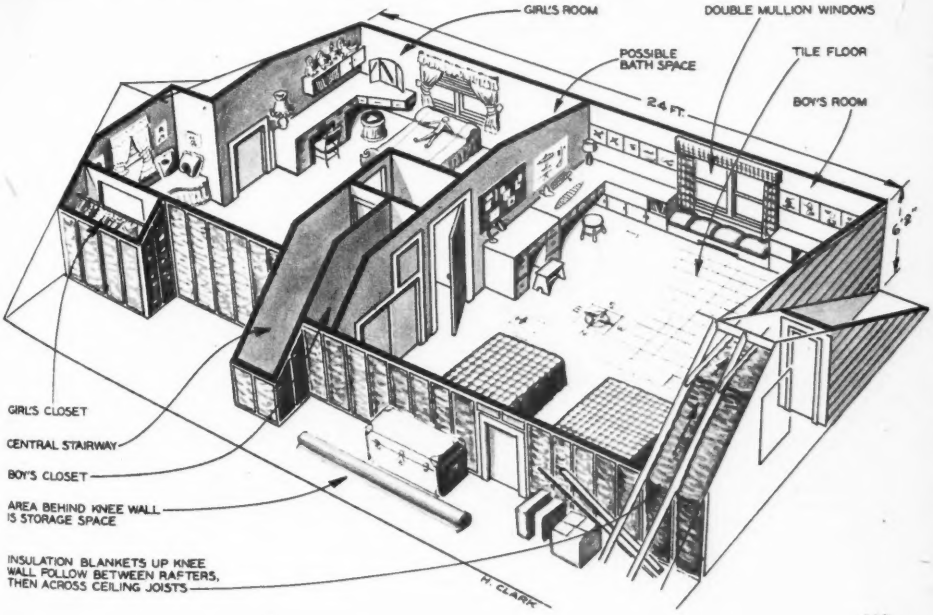
In constructing the new dormer, the roof boards and original small dormers were torn out, as already mentioned. The rafters were raised and nailed to the new outside wall framing. The ceiling slants upward from the 6 ft. 2 in. outside wall to a height of 7 ft. 6 in. at the center.



SECTIONAL VIEW SHOWS SPACE GAINED BY BUILDING OUT SHED DORMER

Drawings above and below show details of dormer construction.





Tearing out two small dormers and replacement with one large dormer shed (above) was first step in attic renovation job. When completed (below), dormer added to home's appearance.

For convenience, a workshop table saw was set up at attic job site (above). Roll blanket insulation of medium thickness is stapled between ceiling rafters and wall studs, as shown below.

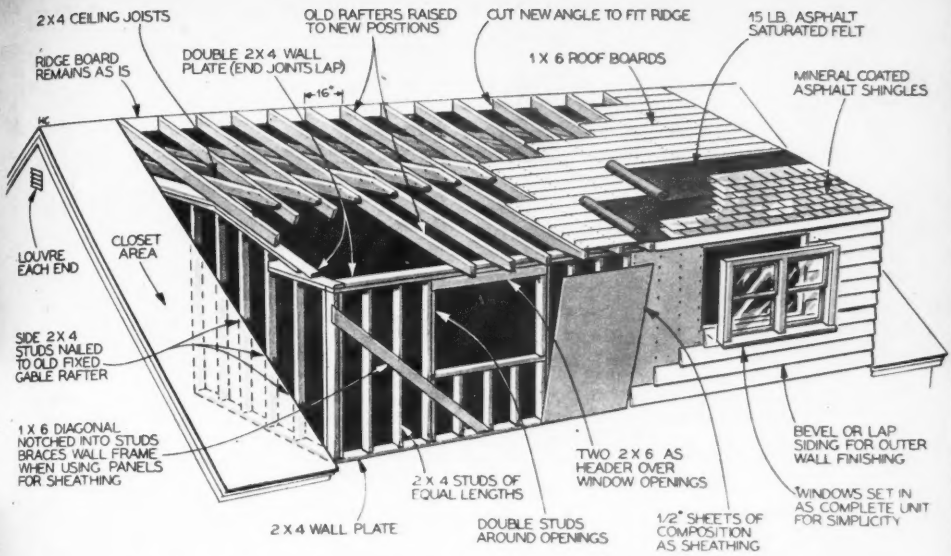
The dormer was sheathed with insulating sheathing and covered with siding which matched the rest of the house. Two windows were cut into each room. Once the roof boards and shingles were put down, the new dormer looked as if it had always been a part of the house (see photos).

Next came the electrical and heating installations. For convenience, five duplex electrical outlets were spotted in the large room and four in the small room. A ceiling light was included in each room, and drop lights were located in each closet and in the storage space.

Heating outlets were spotted to connect to existing ductwork wherever possible. Cold air returns were run to the outside walls and warm air outlets to the kneewall side. A heating contractor and an electrician were brought in for this work, but otherwise no outside assistance was required.

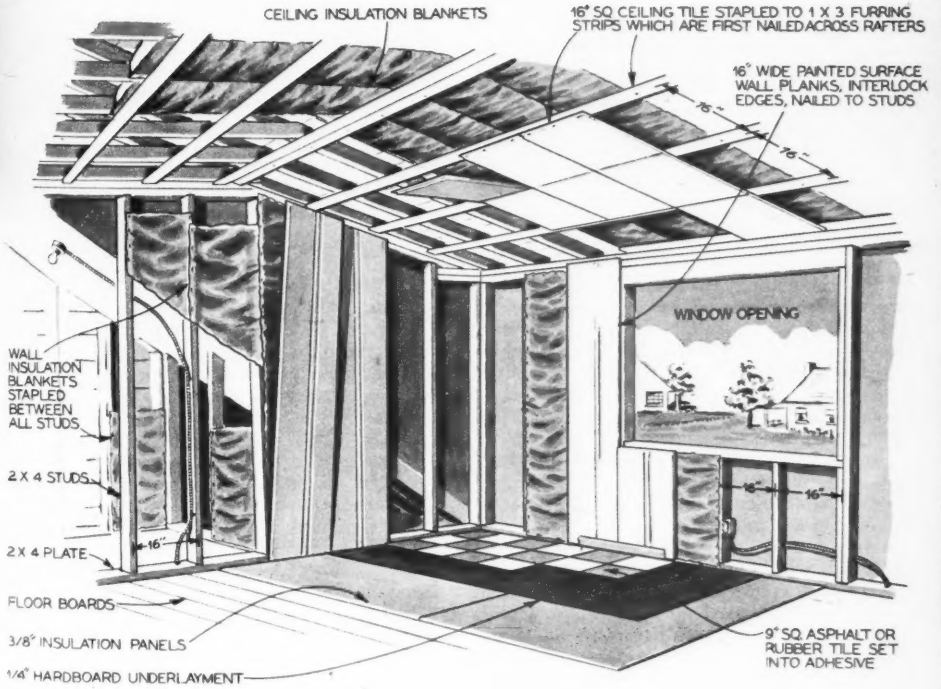
With the heating installation completed, I went to work on the framing for the closets, knee wall, and partition between the two rooms. I used 2x4's on 16 in. centers.

Next came the insulating wool installation. Insulite insulating wool roll blankets, medium thickness, were stapled between studs of all exterior walls, ceiling rafters, and between the studs in the storage area outside walls. Mention of louvers will be made here because of their importance to the insulation story. However, actual installation of the louvers was made as the shed dormer was framed up. Louvers were installed in the front gable and at both ends of the house. They help

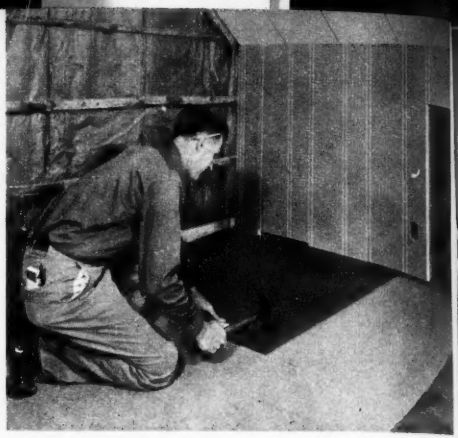


CUTAWAY VIEW REVEALS STRUCTURE AND FINISHING MATERIALS USED IN CONSTRUCTION OF SHED TYPE DORMER

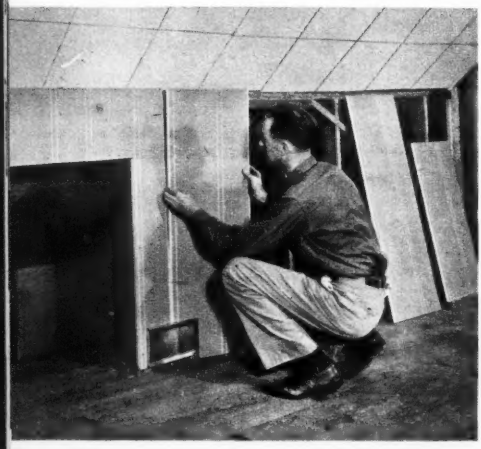
Regardless of size, an attic conversion job calls for the materials and construction details which are clearly shown and labelled in the two pictorial drawings that are shown above and below.

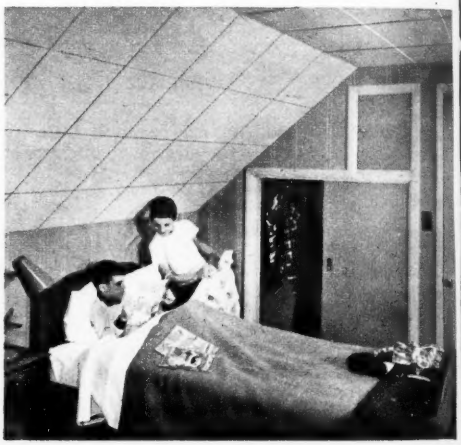


Factory-finished white insulating ceiling tileboard is stapled to furring strips (above). The wall planking is attached to studs with staples concealed by grooved joints of the panels, as shown below.



Wallboard and hardboard underlayment are nailed over flooring prior to laying of asphalt tiles (above). A corner of the finished room showing closet fitted with its hardboard sliding door is shown below.





keep air circulating above the attic ceiling.

For the ceiling, 16x16-in. Lusterlite tileboard was used. This tile comes in a factory-finished white and is ½-in. thick. A tongue-and-groove nailing flange permits concealed, secure fastening. The tile was applied to inexpensive 1x3-in. furring strips with $\frac{9}{16}$-in. Bostitch staples. Five staples were required in applying each tile.

Insulite Durolite ¾-in. factory-finished planking was used on the walls. The warm woodtone-brown finish did away with painting or papering, saving time and money. Once the planking was applied, the wall was completed.

Durolite comes in 16 in. widths, so each piece covers a stud space. That's why I was careful to put in all framing on 16 in. centers. A tongue-and-groove joint with nailing flange makes for concealed fastening and secure application. On all but one wall, the plank was applied directly to the studs with $\frac{9}{16}$-in. staples spotted every 4 in. On that one wall, the studs were spaced at more than 16 in. centers, so I applied 1x3-in. furring strips which served as bases for the staples. The planking is grooved to resemble alternating 10 in. and 6 in. planks.

You'll notice in the accompanying photographs that no molding was used where the ceiling tile and the wall planking come together. This was accomplished by cutting the planking on an angle so that it butted evenly against the tile. Molding can be applied if preferred.

With the walls finished, the floor was next on the work schedule. As a base for the asphalt tile, I put down a thickness of ⅜-in. insulation [*Continued on page* 160]

Providing a safe way to store paint rollers and keep them from drying out between jobs, this device suspends roller in a special cleaning fluid that washes off paint. Sav-A-Roller Corp., Chicago.

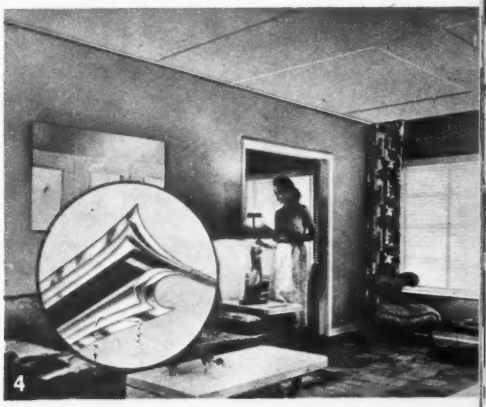
Controlled by a handle from inside, a new glass block panel ventilator consists of an Insulux glass half-block housed in a hinged aluminum frame. Produced by Kimble Glass Co., Toledo, Ohio.

New Products for Your House

For more details, encircle number of items you are interested in, paste this coupon on a postcard and mail to Dept. K, MECHANIX ILLUSTRATED, 67 W. 44th St., New York 36, N. Y.

1 2 3 4 5 6 APRIL 1953

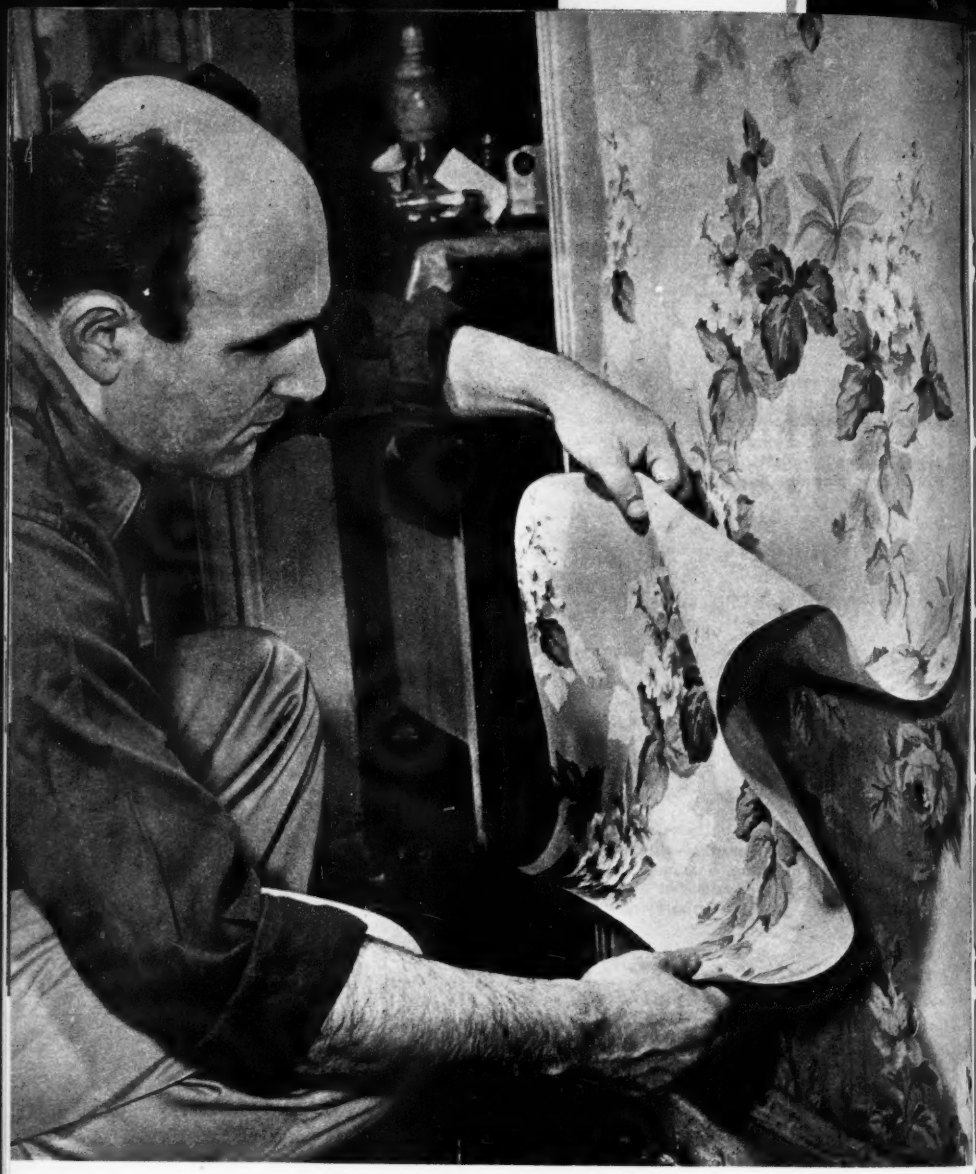
Liquid fertilizer contains 13 essential minerals and rooting hormones in a single inexpensive solution. L. S. Root Laboratories, N. Y. C.



Uskon, conductive rubber sheet sandwiched between plastic and aluminum foil (insert), is applied to ceiling like wallpaper, uses AC current to provide radiant heating. U. S. Rubber Co., N. Y. C.

Attached to a garden hose, a Sprinkleze unit makes it possible to water 5 separate spots up to 30 ft. apart. Can be moved during operation. Has no moving parts. Jons Mfg. Co., St. Matthews, S. C.

Applied after loose rust is scraped away, this product prevents further rusting. Secret is a specially processed odor-free fish oil. Comes in 8 different colors. Rust-Oleum Corp., Evanston, Ill.



Paper Hanging Made Easy

Save money, time and temper by studying these step-by-step instructions before you try wallpapering.

By Norm Liss

DECORATIVE coverings for walls trace their origin back to the earliest days of history when men crudely carved wall decorations in their cave homes, but nowadays you don't have to hack away with hammer and chisel to pretty up your walls. For over one hundred years wallpaper has been one of the most popular forms of room decoration and today anyone can hang it, assuming one has a fair amount of patience and can follow a few simple instructions.

A truckload of equipment isn't necessary. Actually, very few tools are needed and you probably have most of them: ladder, large pail, knife, scissors, yardstick, painter's knife, egg beater, a table and plenty of newspapers. You will also need a paperhanger's fiber brush for smoothing, a paint brush to apply the paste, a seam roller and a roller trimmer. Paperhanger's size may be required to prepare the surface upon which the paper will be hung and can be purchased inexpensively. Of course, you will need wall paper paste —about a pound for every three rolls of paper being used.

Before getting started you have to know how much wallpaper is needed. Although papers come in various widths: 18 in., 22 in., 24 in. (for papers such as fabric-backed Sanitas), and even up to 48 in. on some of the more expensive papers and scenics, every roll consists of exactly 36 square feet of paper. To estimate just how much is required, consult the chart which appears at the end of this article.

A wall must first be prepared before any paper is hung, just as it must be readied before it is painted. Where there is paper already upon the wall, the new paper may be hung directly on top of it if the old

Before cutting the rolls into strips of proper length it is advisable to forestall curling of the paper by unrolling about 2 ft., pattern side up, and pulling it carefully but firmly over edge of the table.

The paste is applied to the back of the paper which is then folded over, paste side to paste side, for easier handling (above). Shown below is the complete equipment needed to do a first-class job. Photo on opposite page shows bottom of strip being applied to wall in preparation for smoothing operation.

It is absolutely essential that the first strip of wallpaper be hung perfectly straight. Do not rely on woodwork as a guide but rig a plumb line, using a piece of chalked string with a small weight attached. Snapping taut string against paper will leave a chalk mark to guide you in this phase of the job.

layer is firm and does not have any buckling spots. Where the paper is loose or uneven it should be pulled off and seams and edges sandpapered.

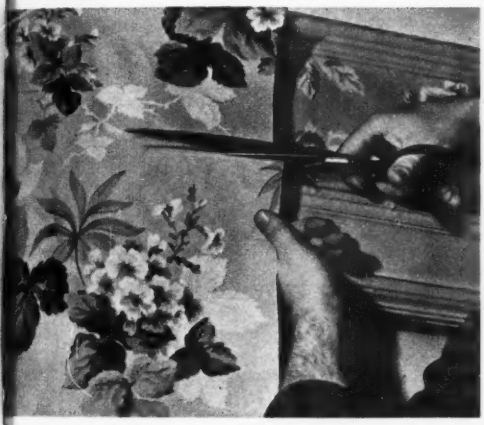
If there are many layers of wallpaper, or if the general condition of the paper is bad and would provide a poor surface, it is advisable to remove the previous layers. This can be done effectively by saturating the paper with warm water and then removing with a scraper or putty knife. Don't try to remove the paper forcibly. If any resistance is encountered, keep adding water until it scrapes off easily. The water can be applied to the paper with a sponge or sprayed on with an ordinary vacuum cleaner sprayer attachment.

Cracks or holes in the wall must be filled before wallpaper is hung over them. Scrape out the loose plaster and fill with spackling compound. Wherever bare wall is exposed, it should be sized. Paperhanger's size is an inexpensive powdered glue preparation which takes about an hour to dry. Spots which appear dull after the size has dried should be resized.

Now you are ready to get to work preparing the paper. Before cutting the rolls into strips of the proper length, follow this easy method to take out the curl and make working it easier. Unroll about two feet, pattern side up. Holding the remainder of the roll in the left hand, pull the unrolled portion firmly between the right hand and

The overlap at the bottom and top of the hung strips can be removed cleanly with a small roller trimmer, or a sharp razor blade can be used.

After the wallpaper has been hung for several minutes and the paste is fairly dry, roll the overlapping edges smooth with a seam roller.



Over a doorway or window, allow the paper to overlap the frame and then crease it down to the top of the frame and trim with a scissors.

When papering over a light switch, remove plate and cut out paper around switch with a scissors. Replaced plate will cover paper edges neatly.

the edge of the table. When the rest of the paper is laid out on the table, it will not have a tendency to curl.

To determine the length to which each strip is to be cut, measure the distance between the ceiling and the baseboard. If you are using a paper whose pattern does not need matching, cut the first strip 8 in. longer than the measurement. Cut all other strips the same size.

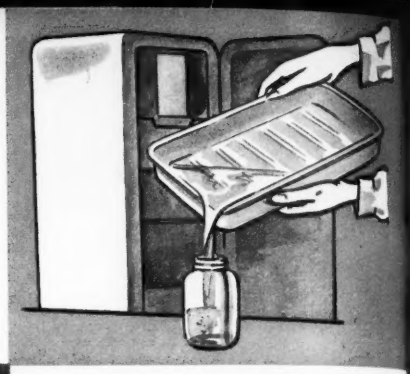
If the pattern is one that requires matching, the strip should also be cut 8 in. longer than the measured length, but a slightly different procedure must be followed. Care should be taken in cutting the first strip so that the point at which you want the design to meet the ceiling is 3 or 4 in. below the top edge of the strip. This will allow for the necessary trimming.

The next strip is then unrolled on top of the first to approximately the same length and then moved alongside and matched at the "Join Here" points indicated on the selvage, or edging. Cut the bottom off even with the preceding strip, and continue on succeeding sections following the same method.

When you have reached this point, turn the pile over, pattern down, and you are ready for pasting.

Paperhanger's paste should be prepared in a large, clean bucket. The paste is sold in powdered form and must be mixed with warm water and [*Continued on page* 150]

Home And Shop Kinks



When defrosting your refrigerator, save the melted frost for your auto battery. It is almost as pure as distilled water and will not leave a mineral deposit.

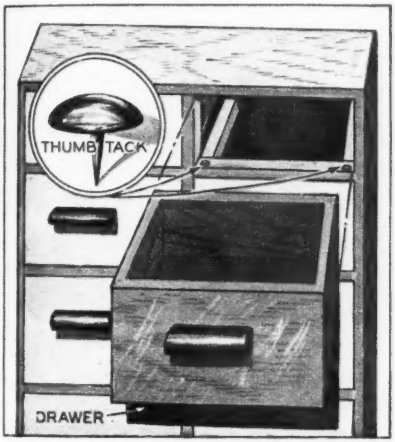
Vacuum gauge used to check performance of car engines can be used to test relative suction efficiency of different vacuum cleaners by comparing the meter readings as produced by each cleaner.

Send Freddie Fumbles your idea of a good short-cut, time-saver or safety device in your work, whether it be in the home, shop, office or farm. Each tip accepted will be paid for at the rate of $10. Naturally we cannot acknowledge or return the ones we cannot use. However all will be carefully read and evaluated. (Those which we can use in other departments of MI will be paid for at our regular rates.) Send in your ideas, a post card will do. Address to Freddie Fumbles, *Mechanix Illustrated* magazine, 67 W. 44th St., New York 36, N. Y.

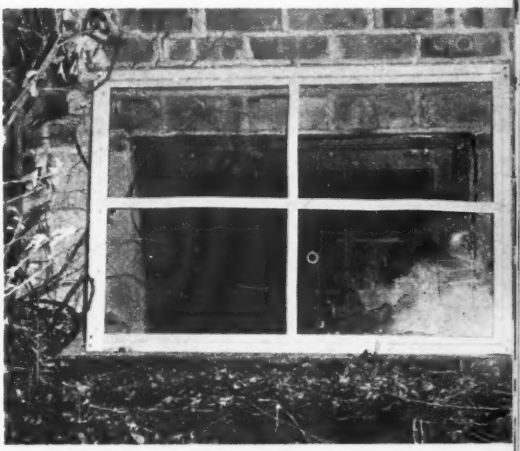
FREDDIE FUMBLES

To keep brushes from drying out between paint jobs, cut a hole in top of a jar of solvent so brush can be held upright in solvent by a battery clamp.

An old kitchen strainer can be used to strain the "skin" out of paint by forcing the paint through the mesh with a wide brush. Even finer straining can be obtained by placing a small piece of mosquito netting over the strainer's wire mesh.

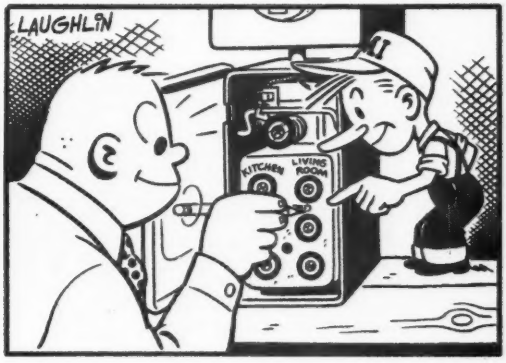


Two round-headed thumb tacks inserted in the frame of a table or desk directly under the drawer tracks will let the drawer slide smoothly, eliminating need for wax or graphite.



Wells in front of cellar windows collect water during storms, but this can be avoided by placing a framed glass lean-to over the well to admit light but keep out most of the rain and snow.

Marking Fuses Will Eliminate Guesswork When They Need Replacing



Glamour Ceiling

Troubled by a cracked, messy looking bathroom ceiling? Recover it with tiles especially designed for damp bathroom conditions.

By Robert Brightman

AS one floor covering manufacturer likes to say, "Everybody looks at your floors." Mebbe so, but the average home owner is more apt to look at his ceilings! A cracked, disfigured ceiling is a definite reflection upon anyone who takes pride in the appearance of his home.

Why does a ceiling develop cracks? Because wood laths and joists are flexible and plaster is not. The settling of the house, traffic in the overhead room, truck traffic outside, and repairs to plumbing, all contribute to cracked ceilings.

There is a definite trend nowadays away from the flat white expanse which formerly constituted a ceiling toward tiled ceilings. However not all ceiling tiles can be used in the bathroom or kitchen because of the high moisture content in the air of these rooms. The problem peculiar to these rooms has been remedied by the introduction of a specially treated tile, made by the Upson Company, which is washable and impervious to water vapor.

The pictures show the various steps necessary in the [*Continued on page* 158]

First step is to install a 1x3 in. pine furring strip next to wall.

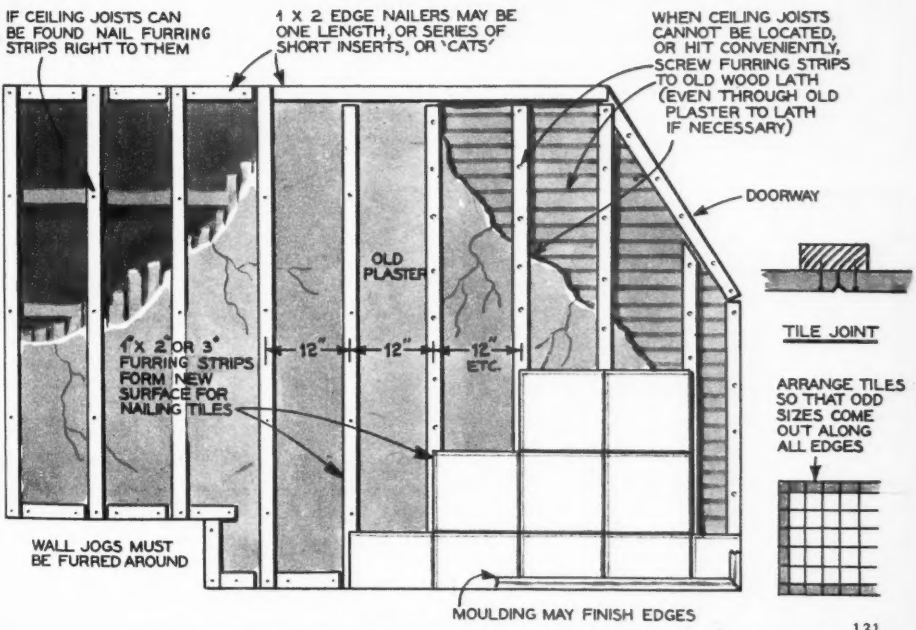
The furring strips, on 12 in. centers, were all screwed into place.

Use template to mark all tiles ½ in. from corners for nails.

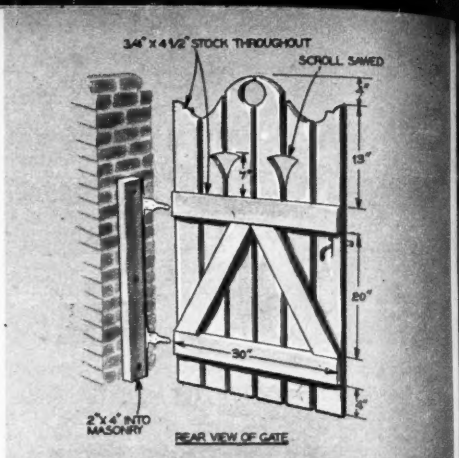
Aligning a furring strip with previously nailed row of tiles.

Note how the irregularly shaped ceiling area near door is furred.

Four nails, one in each corner, secure tiles to furring strips.



Drawing above shows how tiles are used when square pattern is desired.



1. A scroll-sawed top and two cut-outs design.

GARDEN GATES

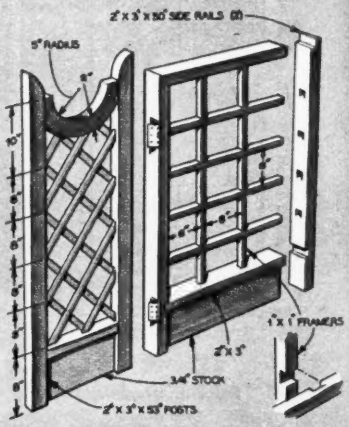
Add a distinctive note to your grounds by building one of these attractive projects from the nine designs shown.

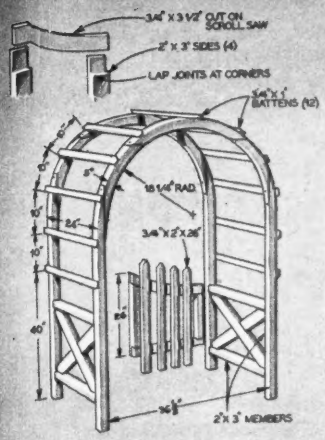
By Hi Sibley

THE character of any homestead is largely established by exterior effects. Among these, front gates are an important feature, indicative of the artistic taste of the occupants. Featured here are nine graceful gate designs to select from, any one of which is well within the skill of the average home craftsman. For extra measure, details for constructing an attractive window box are also included.

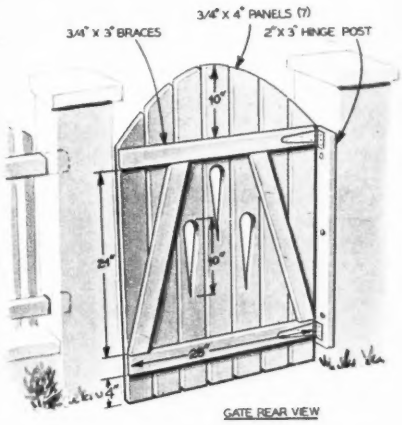
Fig. 1 is a graceful design achieved by simply scroll-sawing the boards according to the pattern shown, thus making decorative cut-outs. The inside view shows the novel bracing. Long T-hinges are installed on the front side.

2. A diamond and square lattice work project.

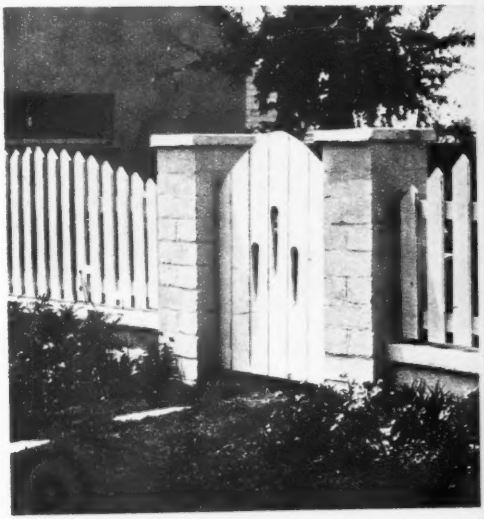




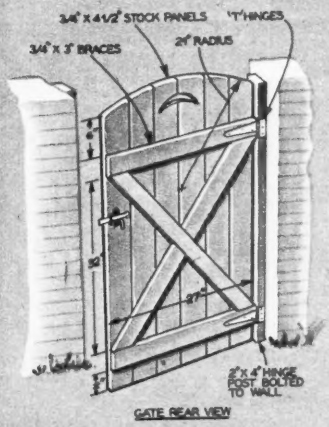
3. Arched gateways are always a popular design.

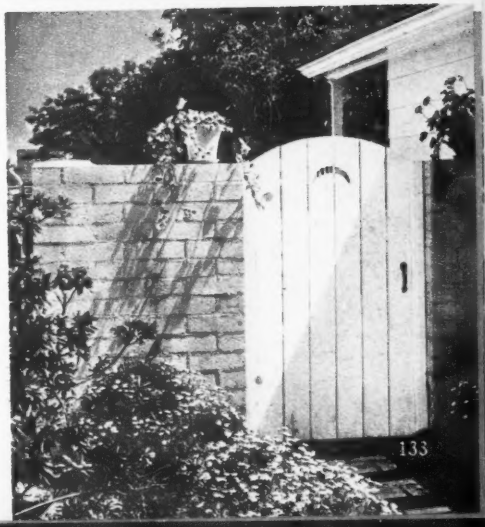


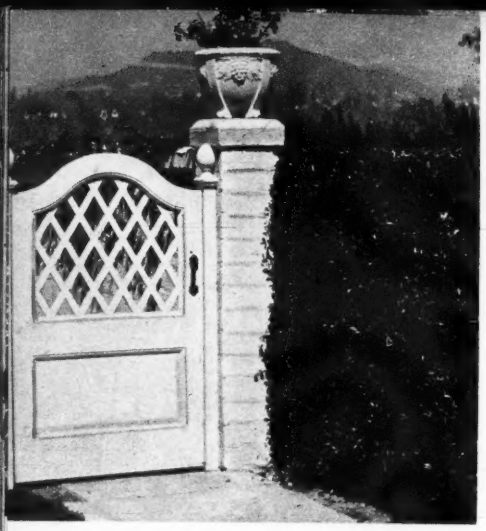
4. Straight boards, a curved top and cut-outs.

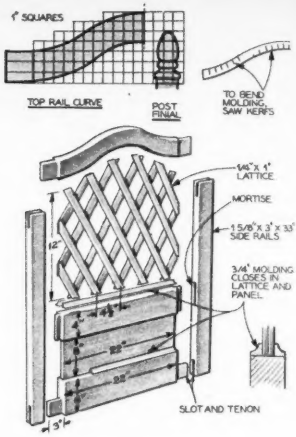


5. High gate design affords the utmost privacy.

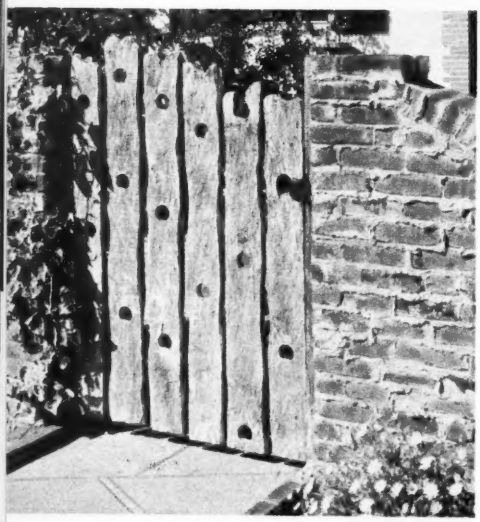


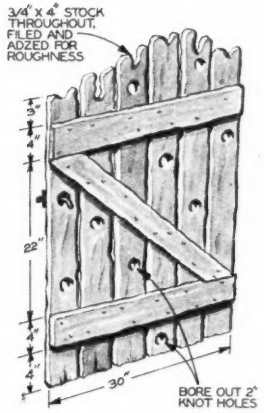






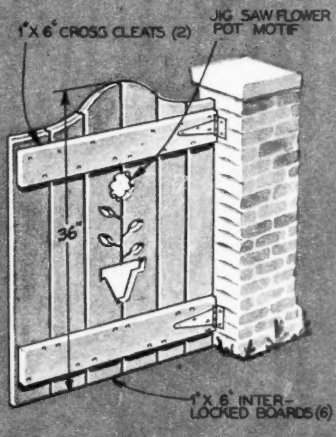
6. Breezes can pass through, but not dogs.

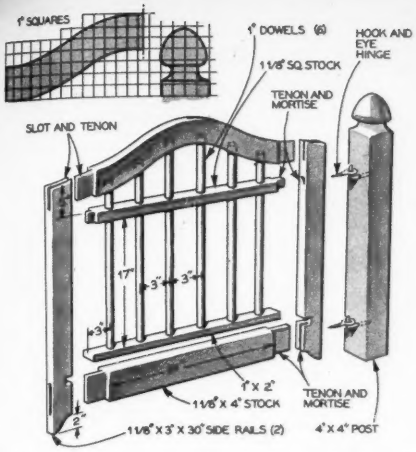




7. Rough finish looks well with brick walls.

8. Flower pot cut-out distinguishes this gate.





9. Curved top, dowels result in simple beauty.

Fig. 2 features two styles of lattice, the diamond and the square, lending pleasing contrast to this light gate and providing a fine view of the garden beyond. The diamond lattice is toe-nailed without molding on each side and the square members are set in recesses in the framing. Note the joints of the top members with the side members.

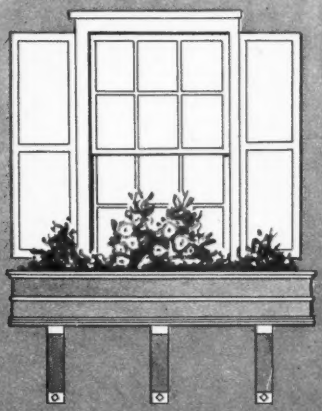
In fig. 3 an arched gateway shows that it can add much to the inviting atmosphere of a home. It is also surprisingly easy to construct. The curved members have lapped joints secured with carriage bolts and screws.

Fig. 4 and fig. 5 show how plain tight-board gates can be made attractive with curved tops and cut-outs. Where gates are set in masonry walls or posts, secure 2x4's to the latter with anchor bolts embedded in the mortar.

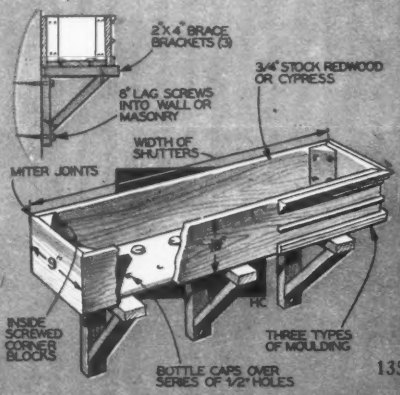
Shown in fig. 6 is a particularly pleasing design with open lattice work that admits a cooling breeze but still will keep your pet from sneaking out of the grounds. Cross members are mortised to the side pieces and the lattice is toe-nailed in the opening and retained with molding on both sides, as is the plywood panel below. To bend the molding under the curved top member, cut kerfs about one-inch apart along the inner edge. The original is a rather heavy gate with 1⅝-in. framing but 1⅛-in. stock can be used just as well.

Fig. 7 produces a very interesting effect by using rough lumber and adzing it to irregular outlines. Imitation knot holes are bored at intervals, as illustrated. This type of gate matches well with hedges or brick walks.

A highly decorative effect is created in fig. 8 by cutting [*Continued on page* 158]



10. Plan for the window box shown in photo 8.



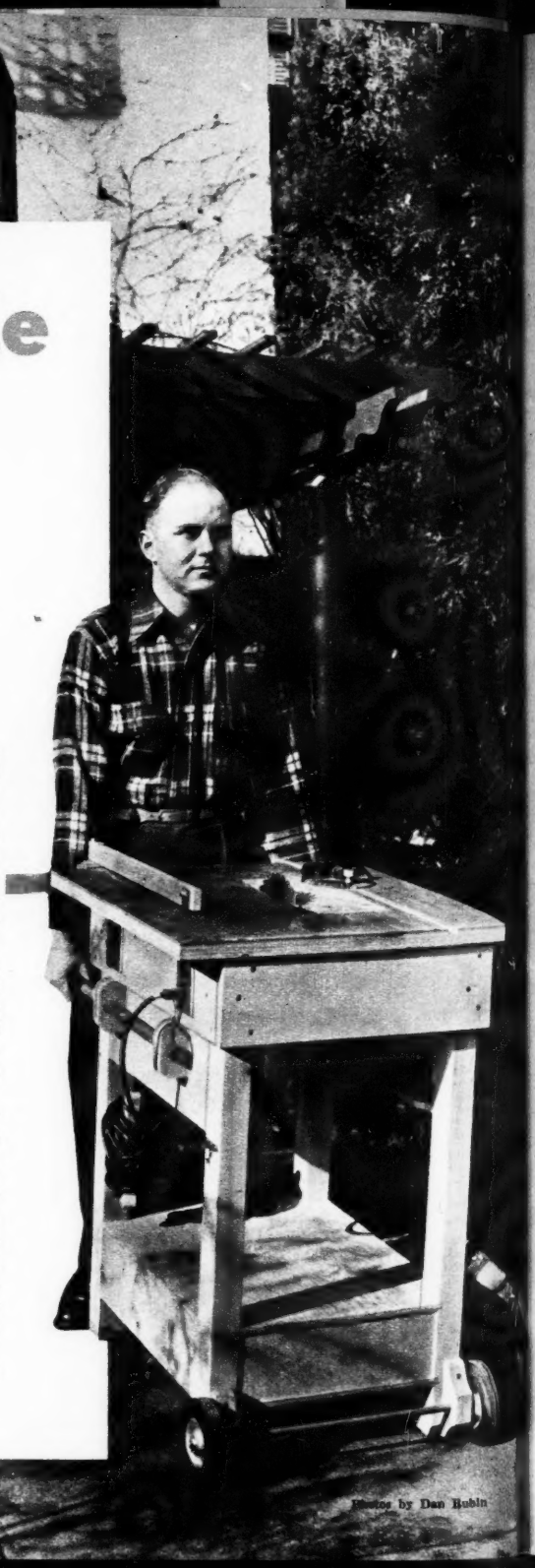
Portable Bench Saw

The handiest tool in the shop. Can be used as a table saw, portable saw, or wheeled to the job.

NEXT to the quarter-inch drill, the most useful tool in the home workshop is without question the table saw (sometimes called the bench saw or circular saw). However, there is one thing the table saw can't do and that is "go" to the work. The work is always brought to the saw. But, it isn't always practical. In fact, sometimes it may be downright impossible, as when cutting large plywood panels or cutting off rafter ends on the roof of a house. The answer is a portable electric saw.

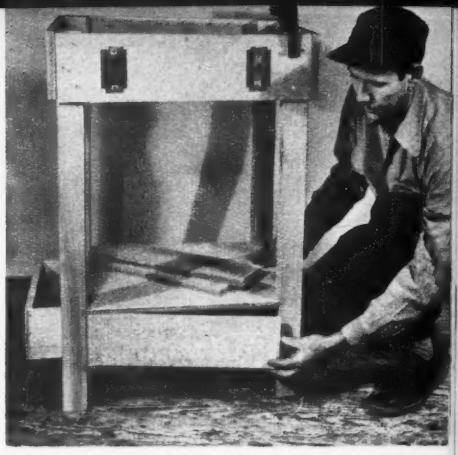
This clever combination takes care of all contingencies. The heart of this tool consists of an 8 in. Porter-Cable electric saw. It can be used as a table saw or converted back into its original purpose—a very fine portable saw—all in less than *one minute*. Furthermore, two built in handles and a pair of wheels enable you to roll the table saw to an outdoor job.

The first thing to do is to cut

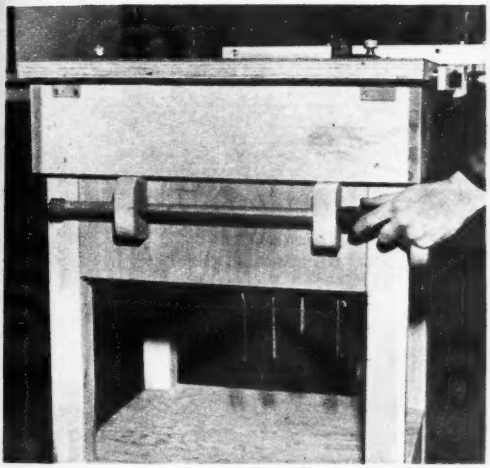


Photos by Dan Rubin

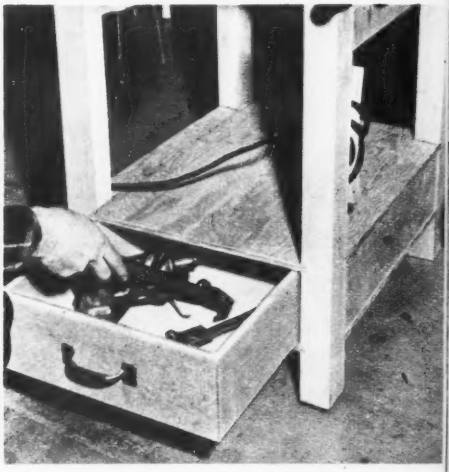
The four main supports of the saw table are made of 2¼ in. lumber. Each one is 36 in. high.



Installing the side panels which form the framework for the utility drawer at bottom of table.

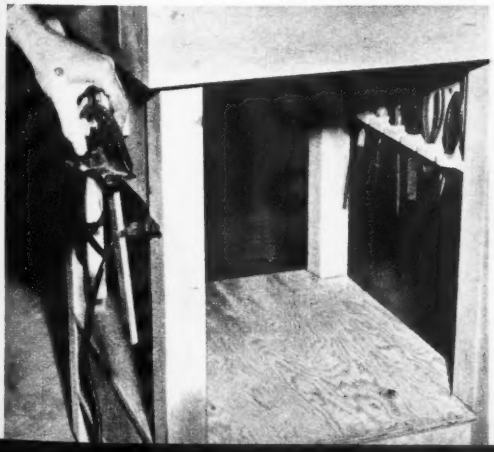


For moving table, handles, made of ½ in. steel pipe, are moved outwards. Note bicycle grips.

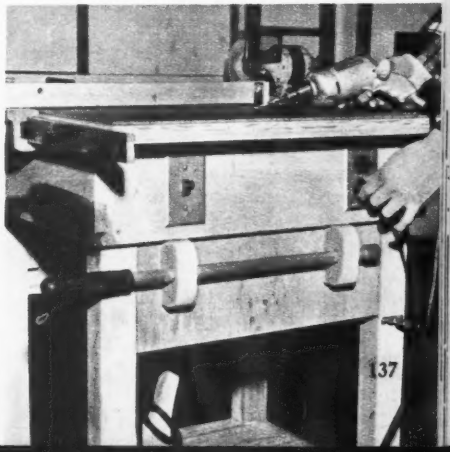


The convenient drawer at the bottom is used to store an electric drill, hammer, pliers, etc.

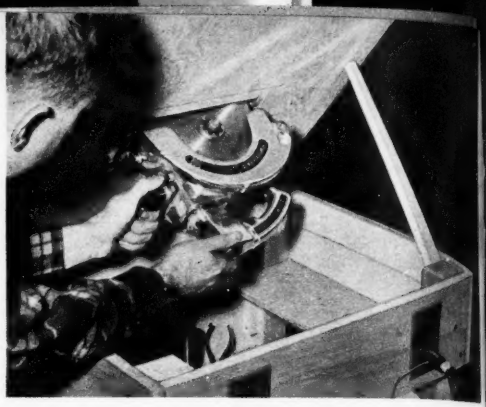
When not in use, the miter gauge is stored on tool holder, screwed to one of the table legs.



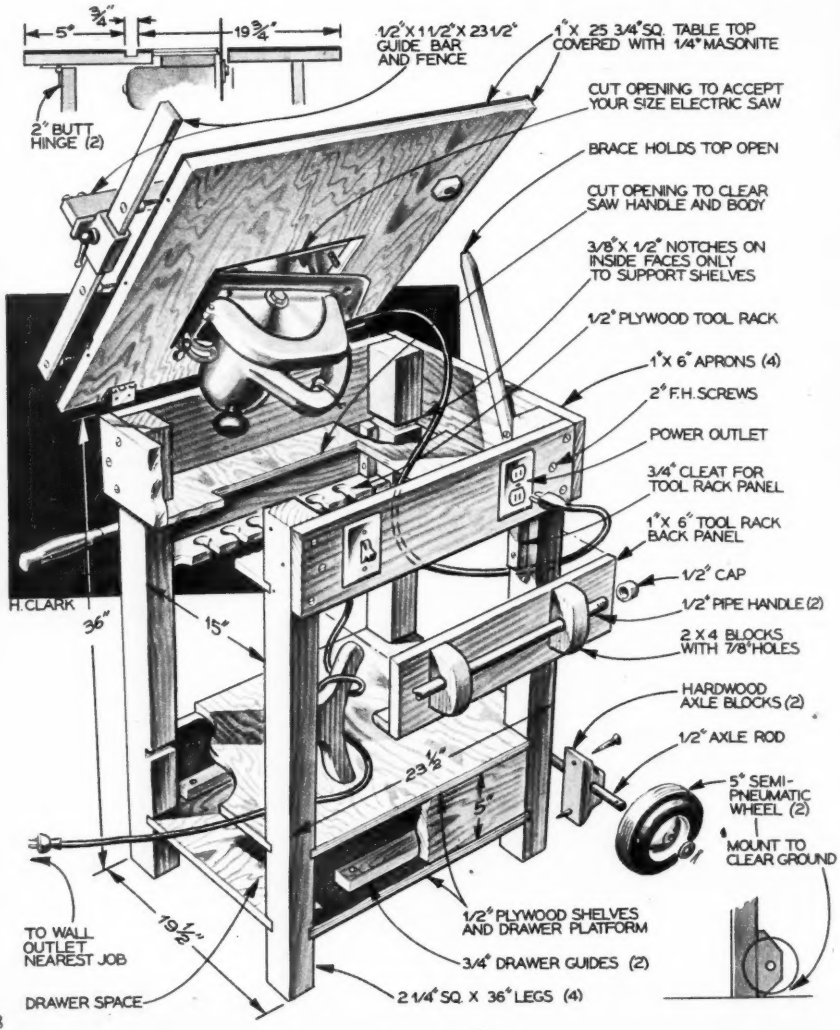
Duplex receptacle provides power for saw and for drill. Switch controls power saw outlet.

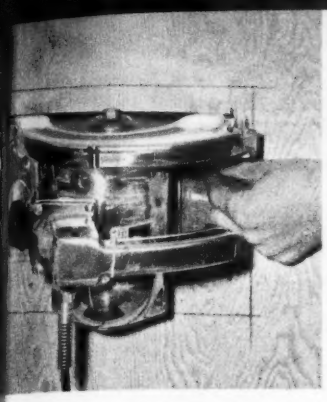


To facilitate installation of the portable saw, the top is hinged. It is held in the open position with a bracket.

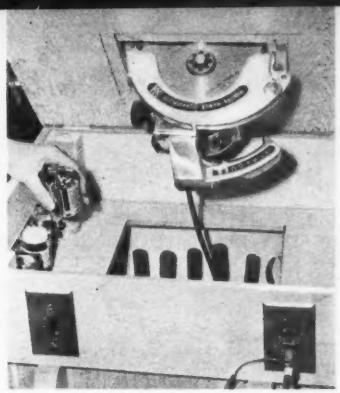


How the saw is inserted. Opening in the table top should be cut of course to match dimensions of your own electric saw.





Only two flathead bolts and wing nuts are necessary to secure the saw and prevent it from shifting.



Top is raised for access to small parts kept in jars. Note tools kept in rack below table.

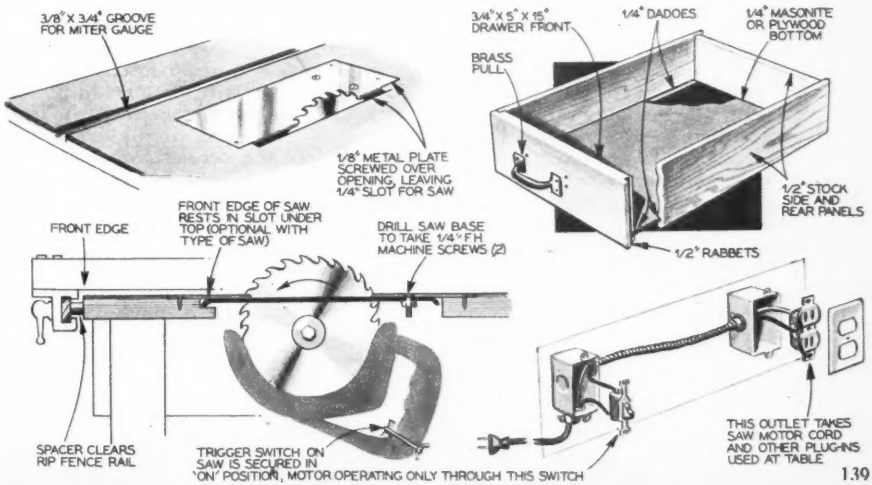
Saw can be used in shop as a table saw, wheeled to the job, or used as a portable tool.

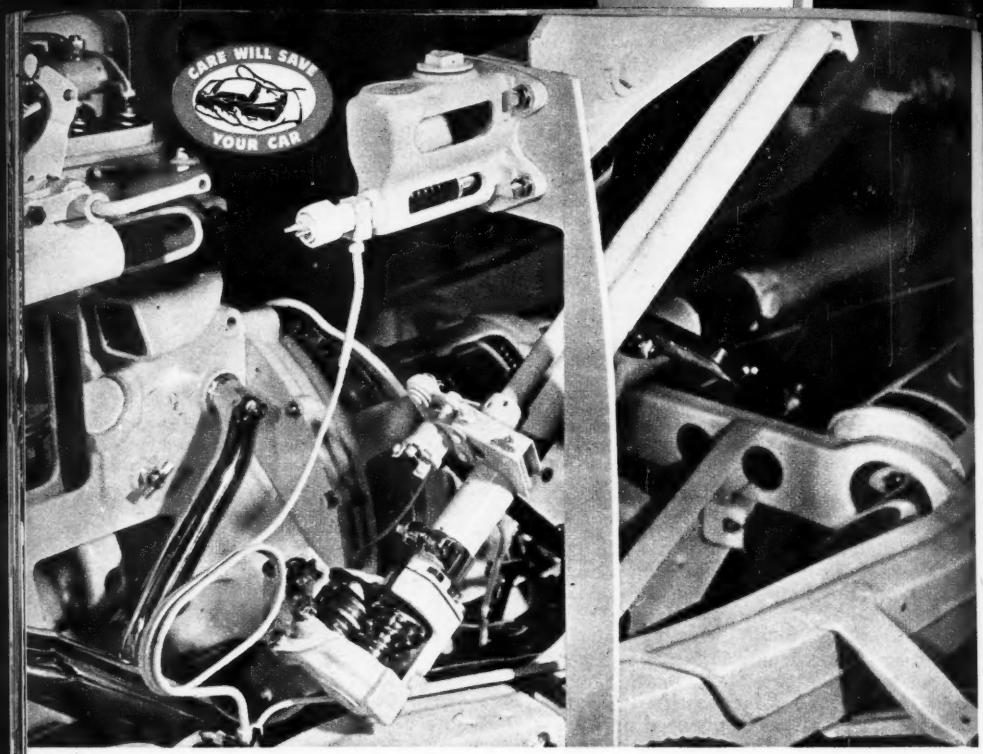
the four posts for the legs. Each one is 36 in. high and is 2¼ in. square. They are dadoed at three places, as shown in the drawing and photos. The upper dadoes, 6 in. from the top, accept a plywood panel. This top panel should have an opening cut in it to clear the saw handle and body of your particular saw.

The table top is laminated. It is made of two ½ in. pieces of plywood plus a top layer of ¼ in. Masonite. This top is grooved for a miter gauge. The miter gauge, as well as the rip fence bar and guide were picked up at a second-hand shop.

Of course, the opening in the table top should be cut to accommodate your own particular portable saw. The detail view shown at the bottom of this page shows how this was done. The front edge of the saw rests in a slot under the table top. The rear of the saw is secured to the table top by means of two ¼ in. flathead machine screws. Wing nuts instead of the hex nuts shown can be used to facilitate tightening. A ⅛-in. aluminum plate, which is recessed into the top, permits the work to slide freely into the blade.

If your saw has a locking switch, it should be left in the "on" position. If it hasn't you can do the same thing by tying a loop of heavy cord or a spring around the handle and pushing it over the switch. Power to the saw is then controlled by means of the toggle switch at the side. The extra outlet is convenient for operating an electric drill or other accessory. The wiring diagram shows how the switch controls both outlets. This means that the saw plug must be removed when using the other outlet. If you don't, the saw of course will be running needlessly. If you prefer you can wire the switch so that the toggle switch controls the upper outlet for the saw only. The lower one will then always be "live." In any [*Continued on page* 177]





Master cylinder for Ford brakes is now on a bracket behind the fire wall.

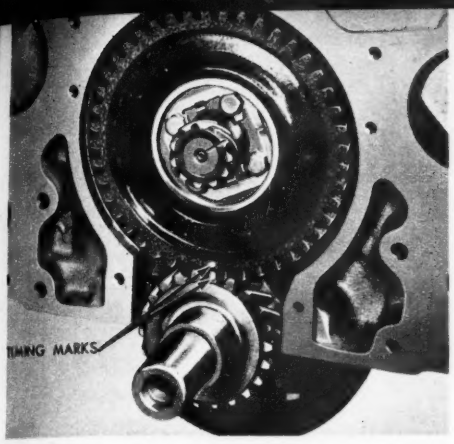
car care PUMPS

By Frederick C. Russell

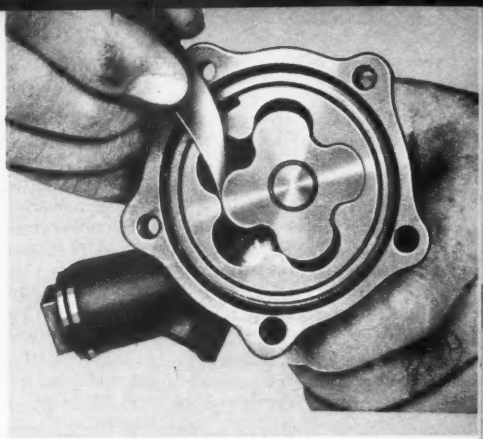
SUPPOSE you were on a quiz program and you were asked to name all the pumps on your car. Would you be stumped after murmuring, "Well, there's the oil pump?" Well, there are a lot more. Your car has more pumps than show up on first count. Beyond the oil, fuel and water pumps there are the various pumps in the automatic transmission and the pressure pump for power steering. Hydraulic brakes involve pumping, the piston of the master cylinder being essentially a plunger pump. One pump that's a sticker is the acceleration well in the carburetor. Then there's a little plunger with pumping action in some of the automatic chokes.

Pumping seems to be basic with automobiles. One that even fools the experts is the anti-stall device used on cars with fluid drives and automatic transmissions. It carries the odd name of "dash pot" but all it does is close the throttle slowly when you lift your foot suddenly from the accelerator. As long as the throttle is open and the engine is under load, the built-in dash-pot piston is in its upward position. Fuel is then in the chamber ready to be fed through the opening of the check valve the moment the accelerator pedal is released. Restriction is just enough to act as a brake on the closing of the throttle. Purpose is to prevent stalling.

Car gears have an interesting and often troublesome pumping action. It explains why you'll sometimes get grease on the right rear brake and none on the left side. Why? The ring gear faces right and it tends to pump lube that way, especially if the gear is too light. Of course, crowned roads accelerate the tendency for lube to



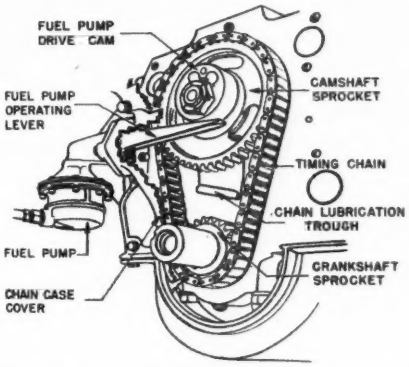
Timing gears have a pumping action which means that gaskets and cover must be in good condition.



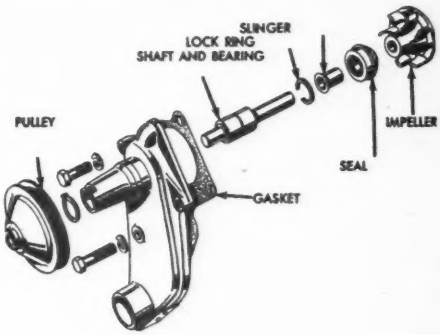
Newest oil pump is a rotar type. Clearance between lobes is being checked with feeler gauge.

flow to the right, but the trouble starts with the gear. Another point of pumping is around the timing gear case where the timing gears, or the chain, help lubricate themselves.

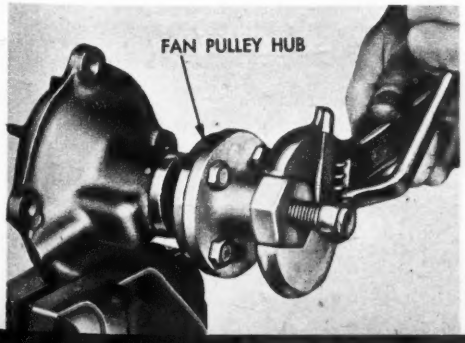
Pumping can thus be both an asset and a liability. Perfect example of the latter is the way the pistons build up pressure within the crankcase if there isn't sufficient venting which can easily occur if the oil filler pipe is clogged or mistakenly capped. One effect of this is to force oil out the lower vent and thus to increase oil consumption at an alarming rate. One of the oddest types of undesirable pumping can be seen when one of the spark plugs is loose. Oil will then start coming out around the plug, even if the engine has

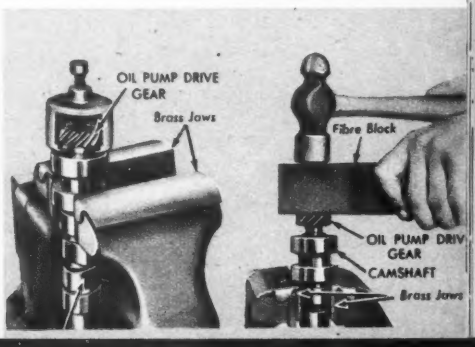


By shortening or lengthening stroke of arm, fuel pump can be made to deliver gas under higher or lower pressure. Below: Special tool is used to remove a DeSoto fan pulley from water pump shaft.



Exploded view of a typical water pump shows why internal lubrication with soluble oil helps prevent wear on shaft bearing. Below: Steps in removing and installing a new Ford oil pump gear.





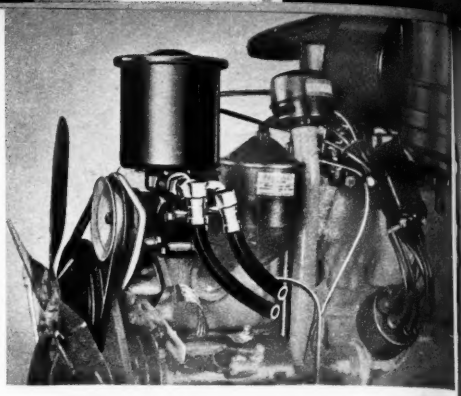
tight rings and is in good condition.

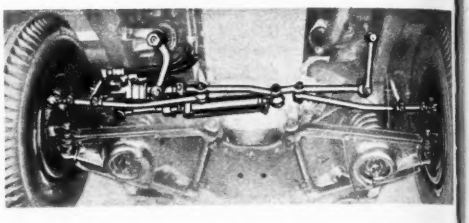
Oil pumps are designed either as a pair of gears or as a pair of rotors, one within the other. Fit is highly important. The oil pump cover should be checked with a straight edge. Naturally it must be free of groove marks and scratches. Sometimes restoring a pump to normal activity is just a matter of replacing this cover. End play in the pump shaft also is important. I've seen cases where low oil pressure was attributed to bearing wear whereas the trouble was just an ailing pump. The oil pump on your car draws oil through a screen and on some jobs the inlet floats on the top surface of the oil which is cleaner and less diluted.

The water pump in the cooling system has no strainer and may thus work against the handicap of having to propel bits of rust, sediment and disintegrated hosing. A filter for the cooling system helps keep the pump healthy; so does use of soluble oil as a rust inhibitor for it not only retards scale formation but oils the pump internally. If the pump has a grease fitting, caution the fellows at the filling station against shooting the works at this point. Many a case of motor fever can be traced to grease shot directly into the cooling system.

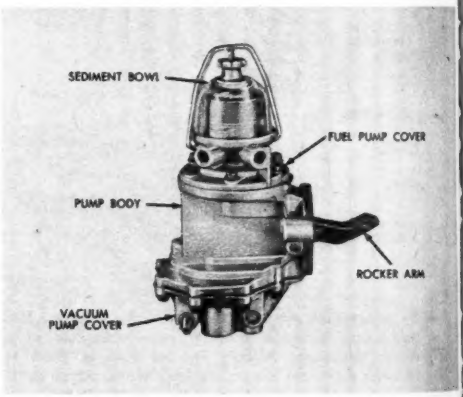
Some folk get more water from a well than do others. It is simply a matter of length of stroke on the pump handle. This explains why on some installations the fuel pump will have a higher pressure than on others. The long stroke has its disadvantages, however. One is that it wears the pump diaphragm faster. It may also provide excessively high fuel pressure which tends to unseat the carburetor's inlet needle valve to cause flooding and some of the effects similar to too high float level.

Going back [*Continued on page* 156]



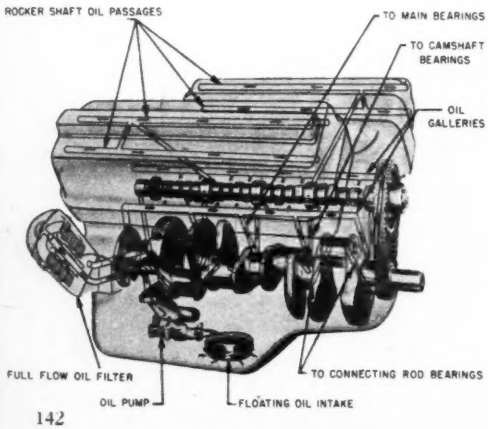


The newest pump now found on some automobiles is the engine-driven pump that builds up oil pressure for use with power steering. Upper picture shows installation on new Packard. Below: The plumbing system that eases the turn.

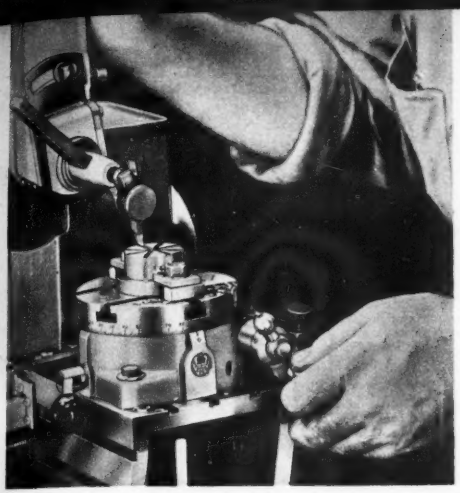


The combination fuel and vacuum pump operated by a rocker arm, vaguely reminiscent of a farmer's water pump.

Left: The floating oil intake of engine's oil pump adjusts itself to the level of the existing oil supply; uses clean oil at top.

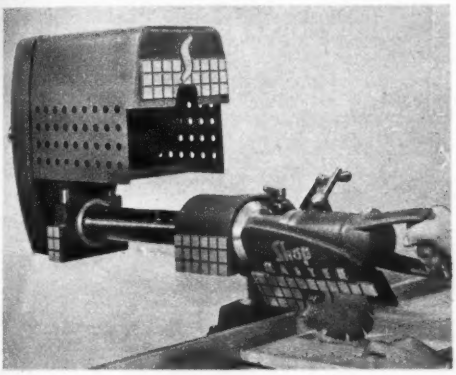


LUBRICATION SYSTEM
FIGURE 22

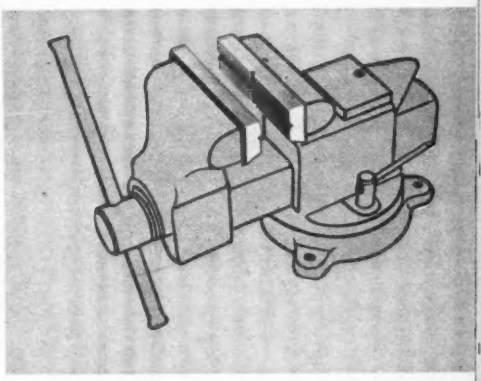


NEW for the SHOP

For mounting small precision work, a new rotary table can be used on a drill press, milling machine, shaper or surface grinder. Equipment includes work clamping bolts, nuts and washers. South Bend Lathe Works, South Bend 22, Ind.

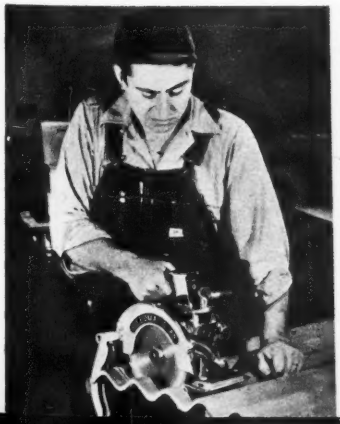


This 4-speed, V-belt drive power tool is a combination circular saw, drill press, sander, router, shaper, and lathe. Moving parts glide on ball bearings. Shopmaster, Inc., Minneapolis, Minn.

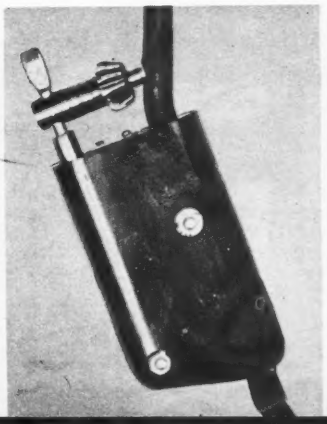


Simplifying attachment and removal, these vise soft jaws have built-in permanent magnets to hold them in position. Two-way V-grooves lock work in place. Magne-Grip Tool Co., Chicago.

Red, green, or blue color of new abrasive wheels tells whether they cut compositions, stone, metals, respectively. Porter-Cable Machine Co., Syracuse 8, N. Y.



Switch requires drill operator to insert chuck key to complete electrical circuit, preventing accidental starting while adjusting chuck. Tricop Dist. Co., Akron.



Clipped to work clothes pocket like a fountain pen, this device provides controlled amount of oil. Plunger cap locks by screwing. Clover House, Santa Monica, Calif.

boating kinks

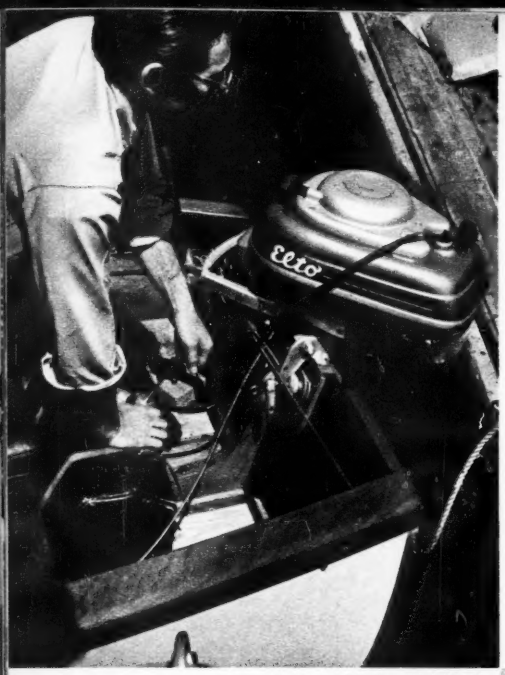


Photo by Walter Steinhard

Auxiliary Fuel Tank. You don't have to have one of the late-model outboard motors in order to benefit from the convenience of an auxiliary fuel tank. Take any large air-tight tank and solder a small bicycle or football pump to the top; then run a hose from a nipple on the bottom of the tank to the motor. Fuel is moved by working pump to build pressure.

Holder for Rod and Reel lets fisherman relax or turn his attention to other matters (such as operating an outboard, rowing, or lighting a pipe) when trolling. Holder consists of a clamp, two pieces of wood, four short lengths of hose, and six machine bolts with butterfly nuts. Assemble all the parts as shown; then clamp the holder any place along your boat's gunwales.

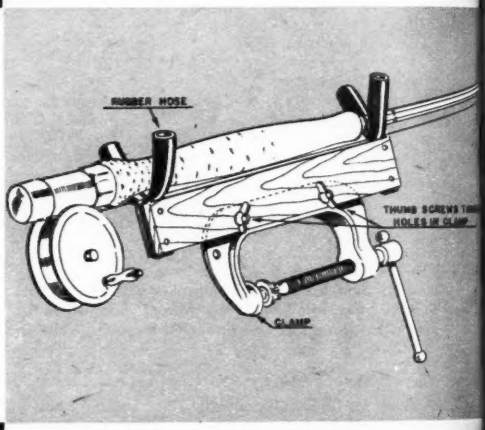
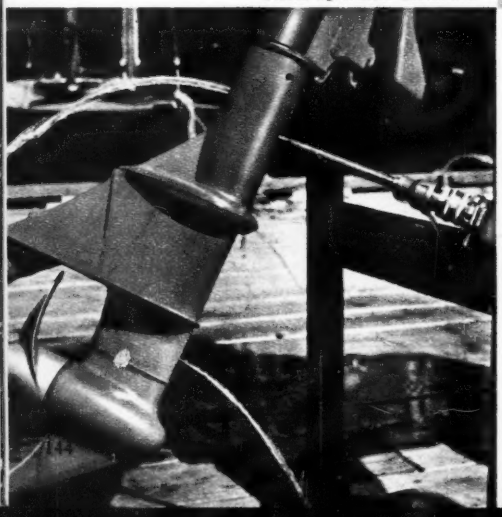
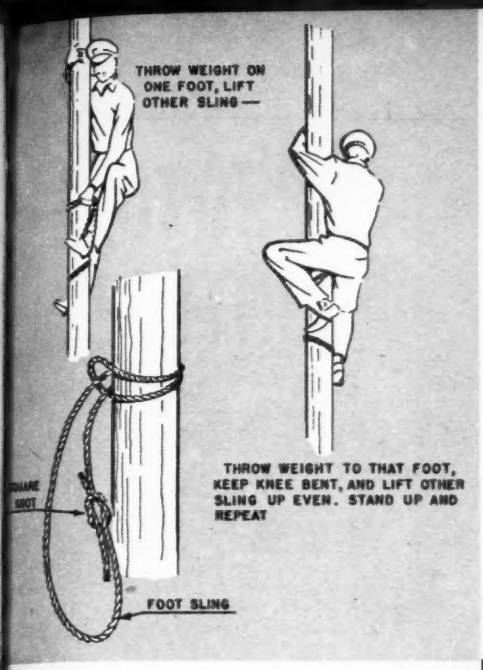


Photo by Walter Steinhard

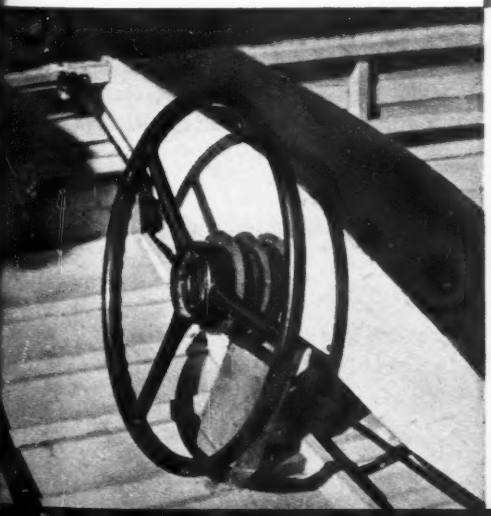


Flush Your Motor by pressure-hose method. Motors with plugs marked "Water Flush" need not be rinsed after use by running them in the usual barrel that's likely to be contaminated with saltwater and grease. A fitting can be bought and attached to garden hose. It jets water into the cooling system so effectively that lower unit is left immaculate.



How to Climb a Mast. This is the seaman's method for going aloft. It it fast and simple, and will not hurt the mast. Tie two 30-in. lines into loops and hitch them about the mast, as illustrated, for your feet. To climb, stand on one foot sling and slide the other up about 24 in. above the first; then step into the higher sling, keep your knee bent, and reach down and pull the lower one up even. Straighten up, position your weight in one sling, and repeat the process on up the mast. For safety's sake, loop a 48-in. line about the mast and your waist to hold you if you lose a grip.

Rubber Transom Pads. Many outboard motors are lost because vibration loosens the clamps. To overcome this, purchase two furniture-caster cups and secure each to the transom with a small screw. Once the motor clamps are tightened, they will not loosen since the rubber in the cups dampens vibration and exerts a lock-washer effect on the outboard clamps.

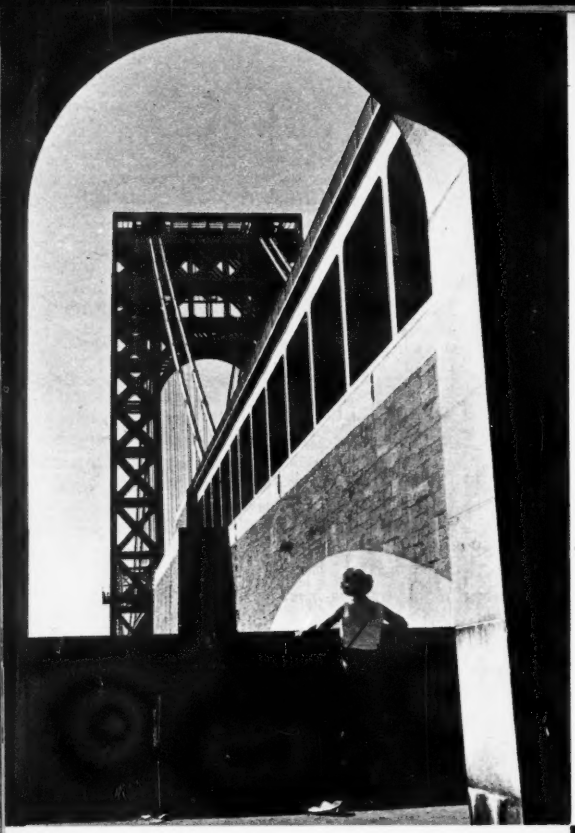


Small-Boat Steerer. Simple yet efficient, this steerer was made out of an old automobile steering wheel. Three 6-in. steel disks and two 4-in. wooden disks were assembled sandwich-like over the shortened wheel shaft to form valleys to take the steering cables. Assembled for a cost of less than a dollar, the steerer serves as well as if factory-made.

MONTHLY

PHOTO CONTEST

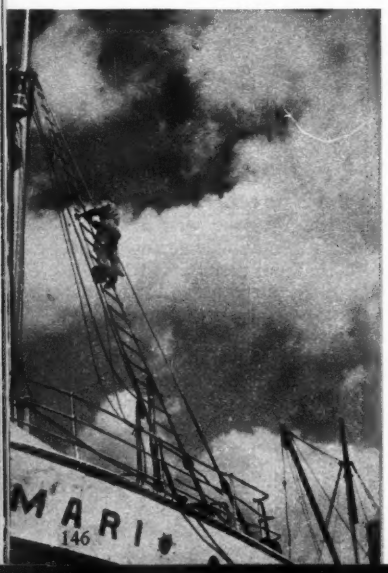
Please put your name, address and picture-taking data on back of each print. Wrap with cardboard stiffeners and enclose a self-addressed stamped envelope or postage for return of unused photos. Prize-winning pictures are not returned. Judges are MI Editors. Duplicate prizes awarded in case of tie. Please address your entries to: Photo Contest, *Mechanix Illustrated*, 67 W. 44th St., N. Y. C. 36



1st Prize ($10.00) .....Through The Arch Taken by Howard Goldstein of Brooklyn with a Rollei camera; 1/25th at f-22; pan film, K2 filter.

$5.00 Award .....High Stepper Jack Lloyd of Los Angeles took this shot in Le Havre, France, with a roll film camera at 1/100th.

$5.00 Award .....Pigeon Fanciers By Dick Ferguson of Palo Alto, Calif. Exposed at 1/100th at f-8; Plus X film.



$5.00 Award .....Beach Sports Exposed bv Bill Ficklin of Ithaca, N. Y. at 1/250th.

The arms and legs are marked off with ink on one of two identical photos.

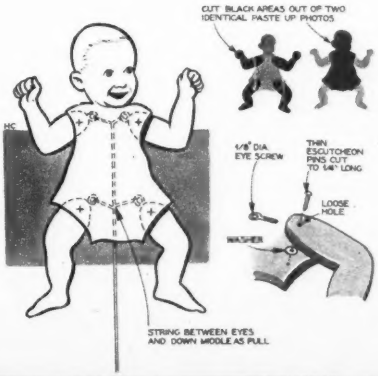
Next step is to cut out limbs with a coping saw; make sure blade is sharp

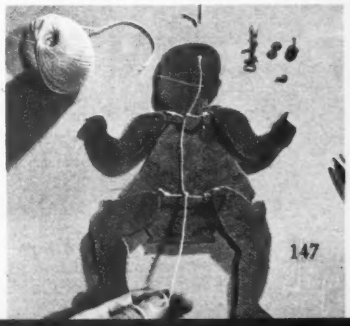
Animate Your Photographs

A pull on a string and this photo comes to life. To make this toy choose or make a photograph of your child (or even yourself) in a pose which shows the arms and legs suitably extended. Make two identical enlargements and glue these on thin Masonite or plywood.

Now you have two mounted prints; on one you will want to use only the torso, so mark off the legs and arms. On the other [*Continued on page* 171]

The partially assembled movable statuette showing screw eyes, nails, and washers. Below: Limbs in place and cord attached, ready for animation.





Compur shutter: 1/25th. f-4.7; Panatomic X.

Focal plane shutter moving up at 1/100th.

Focal plane shutter moving down at 1/25th.

Curtain shutter moving from right to left.

Kinescope Photos

TV pictures are easy to take, but look what happens if you use a focal plane shutter.

Set shutter at time and lens at widest opening for focusing. Basic exposure is 1/25th at f-4.5 with high speed pan film.

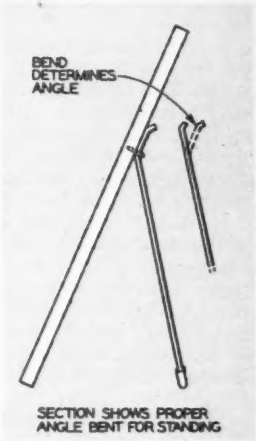
IF you own a television set and camera, you can start a photographic collection of your favorite TV stars right in your own living room. No lights are necessary, in fact the best results are obtained by having all the lights in the room out when you take your shots. The only extra piece of equipment that you will need is a tripod.

Working close, you must be careful when sighting the TV screen through your viewer. It may throw you off center, so use the ground glass back on your camera. If you use a roll film camera open the back before you load the film into the camera and check the image by using a piece of waxed paper held flush over the opening. Move the camera back or forth until the TV screen fills the film area and rack the bellows until the image on the screen is as sharp as possible. Focus on the horizontal lines. The set in the background, a 17 in. RCA receiver, was tuned so that the horizontal scan- [*Continued on page* 162]

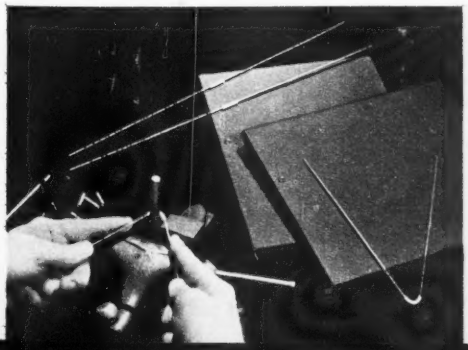
easy easel

ANY picture frame, no matter what its dimensions are, can be made into an easel-type stand for holding your favorite photograph. All you need is a couple of screw eyes and a length of 1/8 in. soft iron rod. The ubiquitous wire coat hanger can be pressed into service or you can use 1/8 in. bronze welding rods.

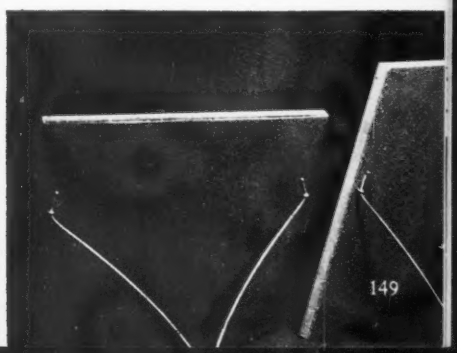
Bend the rod or wire around a jig as shown in the photograph below. A piece of rubber tubing slipped down into the bend will prevent the easel from slipping and at the same time protect polished furniture. The angle at which the picture frame will stand depends upon how the upper part of the wire is bent. The two screw eyes through which the rod is passed should be placed slightly above the center of the picture frame.—*Dorsey T. Dobson* •



Rod is bent by using a half-inch steel bar clamped in a vise as a jig. A piece of rubber tubing at bottom protects polished furniture from scratches.



Shown below are the backs of two 8x10 framed photos. To change from a vertical to a horizontal picture, move the two screw eyes to adjacent sides.



Paper Hanging Made Easy

[*Continued from page* 127]

beaten until it reaches the proper consistency for application. It must be thick enough to permit the paper to be slid around until it is in exactly the right position when being hung.

The proper mixing method is to add the paste to the water—not the water to the paste. With a rotary egg beater, mix until the paste is smooth. When ready to use, the paste should have the consistency of a cream soup.

Don't mix more than half a bucket of paste at a time and be sure to let it cool to room temperature before using. A handy addition to your paste bucket is a piece of string tied across the top to provide a resting place for your brush. The size of the paste brush is not important.

With the wallpaper on the table, pattern side down, apply paste to the back of the paper starting from the top end and going two-thirds of the way down. When pasting near the edges, raise the paper slightly to avoid smearing the table and the sheets below.

Before pasting the remaining third of the paper, fold the top end of the strip over to within 2 in. of the point where the paste ends, making sure that the edges are perfectly even and the fold is not creased. This will bring the top portion paste side to paste side. Fold again before you continue if you need more room to work on the table.

Next, the remainder of the exposed back of the strip of wallpaper is coated with paste, stopping at about 1 in. from the edge of the paper. Fold this portion of the strip back upon itself so that the paste-free inch overlaps the previously folded section, being careful again to keep the edges even and the fold uncreased. Now all pasted surfaces are face to face, covering each other.

Incidentally, in pasting and folding the paper you may find that you prefer having the smaller fold at the top rather than the larger two-thirds. This will be especially true with shorter people who find the paper more workable that way.

Each side of the paper has a selvage (edging) which must now be trimmed. This can be done by cutting with a sharp scissors or by placing a straightedge along the line and trimming with a knife. Either method is effective. If you are using shears and the selvage line is not clearly marked, a line should be drawn first with a pencil to provide an accurate guide. Some wallpapers have a perforated selvage which can be easily torn free by hand.

The first strip of wallpaper is usually hung starting from a corner, window or door. It is essential that the first strip be absolutely straight and you can't always rely upon the woodwork as a guide. A simple and accurate procedure for assuring that the strip will hang straight is to rig a plumb line using a piece of string with any small weight attached to its end. From the starting corner measure a length 1 in. less than the width of the wallpaper and attach one end of the string there at the ceiling, letting the weighted end hang free. Either draw a pencil line following the string, or rub it with chalk and snap it so that a definite guide mark is indicated.

Place your smoothing brush on top of the ladder or in your pocket and mount the ladder with the pasted strip over your arm. Unfold the strip by grasping the top edge and letting the weight of the paper pull the remainder down. Place the paper in position so that the design meets the ceiling at the point previously determined, with a portion overlapping at the top.

If the paste was prepared to the proper thickness, the paper will slide easily so that you can position it. Line up the edge of the paper with the mark you made with your plumb line, using the palm of your hand to adjust the paper. The other edge should overlap the adjoining wall.

When the edge is properly aligned, take your smoothing brush and make one stroke down the center of the strip, then brush to the right and to the left, continuing halfway down the wall. Check the edge carefully to be sure that it has remained straight. If it is not aligned with the guide on the wall, you will have to pull off the paper as far as necessary and straighten it.

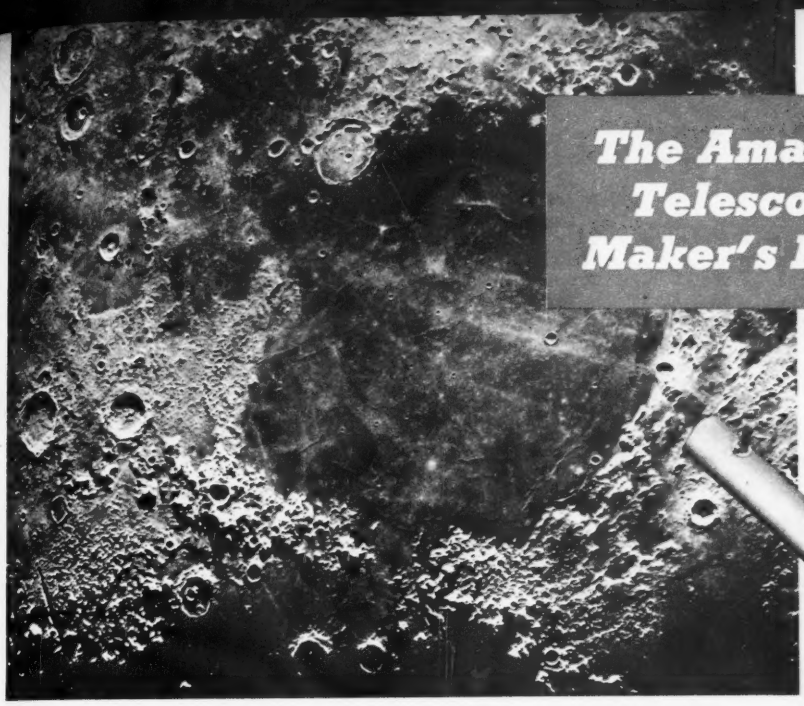
Unfold the bottom section and smooth onto the wall in the same manner as the upper portion. The overlap at both bottom and top can be removed with a roller trimmer, which consists of a sharp, circular disc mounted on a handle. It will remove the surplus if it is run along the edge. Remove, with a damp rag, any paste which may have smeared on the woodwork.

Pat the edge of the paper into the corner with your smoothing brush, but do not trim off the 1 in. overlap as it will be covered by the last strip you hang. The narrow piece will also provide a corner which will not buckle, even though the corner may not be perfect. Subsequent spots where walls adjoin around the room should also be papered with a small overlap.

You are now ready to hang the second

[*Continued on page* 154]

The Amateur Telescope Maker's Page



The Sea of Serenity: picture taken through a telescope at Lick Observatory.

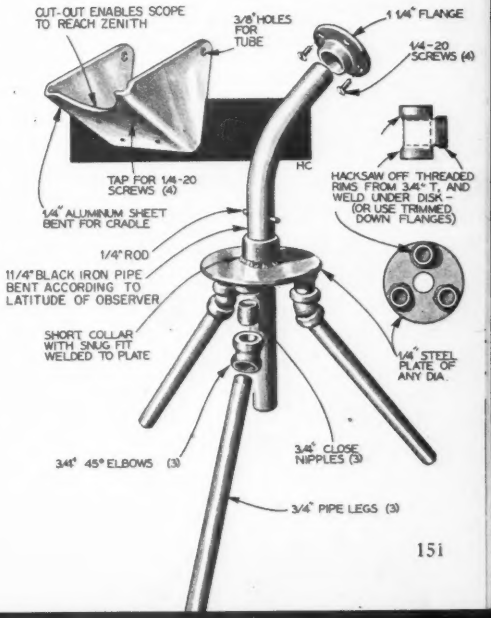
Anthony Perniciaro of New Britain, Conn., and his six-inch reflector built from MI Plan P-6. Construction details are shown in drawing below.

THE LUNAR LANDSCAPE

PROBABLY the most rewarding sight to any amateur telescope maker is a view of the moon through the instrument which he has fashioned with his own hands. Invariably, this is the first object upon which he first focuses his labor of love.

A few facts, about the earth's nearest celestial neighbor, are in order. Its average distance from the earth is about 238,000 miles. The moon's diameter is just a bit more than one quarter of the earth's. The temperature of the moon varies from one extreme to the other. If you could transport yourself there and hold a thermometer in the sun, it would register 200° F. However, if you should move into the dark of the moon you would get a reading of 200° below zero F. Why? Because the moon has no air to temper these extreme ranges.

As you look at the moon through your telescope you will note that its surface is pock-marked by huge craters. Here and there are large flat areas. They have been termed such odd names as, the Sea of Showers, the Sea of Tranquillity, the Sea of Serenity. They [*Continued on page* 190]

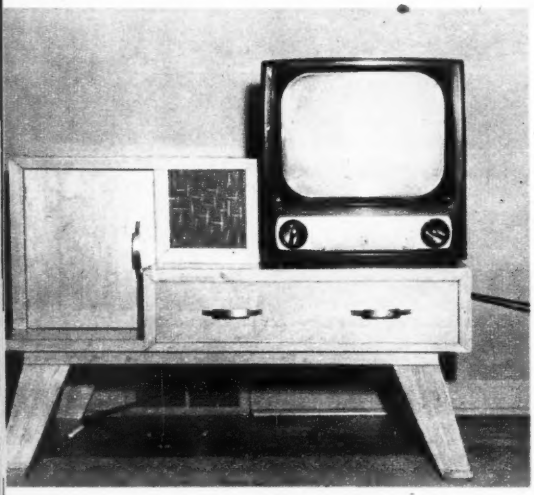


MI

WORKBENCH AWARD WINNERS

Ford starter motor provides power for this plywood battery-operated Jeep built for children by Richard S. Hayes, New Orleans.

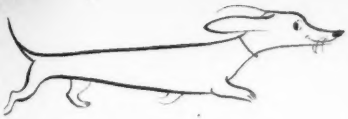
TV table made by Cliff Basta, Syracuse, N. Y., features scrap wood frame covered with maple plywood rubbed to smooth finish.



Each craftsman whose project is shown here receives a $5 check and a Workbench Award Certificate. How about sending us a photo and description of your latest project? If you aren't a winner, you may still receive a Certificate Of Merit. Photographs of your workshop are also eligible for an award. Send entries to MECHANIX ILLUSTRATED Workbench Awards, 67 West 44th Street, New York 36, New York.

Speed of 40 mph with 10 hp outboard is claimed for this Mosquito Class B Utility Racer built to MI Plan No. B-203 by Ray Tracy and Walter Beaton, Jr., Carrington, N. D.

Gun cabinet holds 6 rifles and has a shelf for pistols plus a drawer for loading components. Herman Strasser, Bridgeville, Pa.

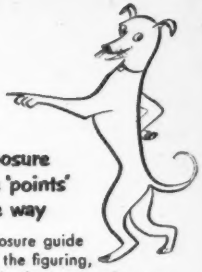


A little film goes a long way

Uses economical 8mm. roll film with easy, no-thread loading. Enough film in each roll to shoot 30-40 average-length movie scenes!

Movies rain or shine

Your choice of an f/2.7 lens . . . plenty fast enough for cloudy-day shooting . . . or a super-speedy f/1.9 job that can see in the rain. Both Lumenized (hard-coated), of course.



Exposure guide 'points' the way

Built-in exposure guide takes out all the figuring, leaves only the fun . . . makes sure exposure's on the button every time!

It's the sportsman's movie camera

CINE-KODAK RELIANT CAMERA

With f/2.7 lens, $82.30

With super-speedy f/1.9 lens, $102.25

Prices include Federal Tax and are subject to change without notice.

Telephoto for long reach

It's an accessory 3x to let you come up close on those hard-to-reach shots. View finder shows fields for standard or telephoto lens.

Tough...rugged

Die-cast aluminum body is built to take it. Your "Reliant" thrives on rough going—yet it's sweet-running as a custom-made reel.

Color movies, of course

Gets wonderful full-color movies as easily as black-and-white. Inexpensive, too, Kodachrome movie film costs only $3.95 a roll . . . complete . . . ready to show!

Slow motion, too

Really cuts fast action down to size. Use it with any film, either lens, for those extra-detailed effects.

Slips in a pocket

Light and compact enough to slip in a jacket pocket where it's always ready when action starts popping. Swings and points as easily as your own 12-gauge.

See "Photographic Equipment and Supplies"

See the "Reliant" at your Kodak dealer's

He'll be happy to help you choose the model that's right for you, the f/2.7 or the f/1.9. Either way you're getting "tops" in movie-making enjoyment. Other Kodak movie cameras from $42.50.

Eastman Kodak Company, Rochester 4, N.Y.

Kodak
TRADE-MARK

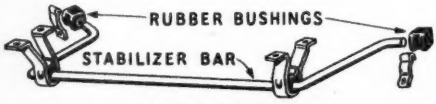
Care and Feeding of Engines

BY S. P. CORP

HARD STEERING, SIDESWAY, AND RATTLES

If your car is small, you have a stabilizer bar at the front. If it is large, you have stabilizers both front and rear. Stabilizers are used to offset the tendency of any car to lean outward on a curve, as weight shifts to the two outside springs.

Looking under the front, you will find this bar attached to the frame side members, with ends bent toward the rear forming lever arms. It is mounted in rubber bushings, both at the frame and at the lower support arm.



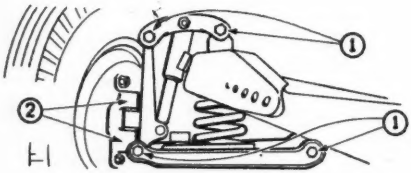
FRONT STABILIZER BAR

When these bushings deteriorate as a result of excessive lubrication and road shock, your car will steer harder, there will be more sidesway, and you may develop an irritating rattle, especially on rough roads. If your car has a rear stabilizer, it is subject to the same trouble.

To end the trouble, replace the rubber bushings!

KING PINS AND TIRE WEAR

Months of winter driving may have caused slush, ice, and salt to penetrate front wheel suspension parts, causing wear and affecting alignment, which causes tire wear.



FRONT WHEEL SUSPENSION

Right now is a good time to inspect these parts—(1) the threaded bushings of upper and lower control arms, and (2) the king pin bushings and pins. Replace them if worn.

BEST BET FOR RING REPLACEMENT

Sealed Power KromeX Ring Sets are your best bet for double mileage when you re-ring your engine. Sealed Power chrome rings are used as original equipment by 23 leading engine builders. Only Sealed Power KromeX Sets have the famous MD-50 Steel Oil Ring, with the Full-Flow Spring. Write for your free copy of "MORE POWER, Less Oil, Less Gas," a valuable illustrated manual on car care. Sealed Power Corporation, Dept. J-4, Muskegon, Mich.

Papering Made Easy

[*Continued from page* 150]

strip of paper. After pasting, bring it up to where the pattern matches the first strip on the wall. Slide it toward the adjoining section so that it overlaps about $\frac{1}{16}$ in. Any paste smeared on the paper should be removed with a sponge or damp cloth if the paper is waterfast. If not, use a dry cloth. After the paper has been hung for several minutes, roll the edge with a seam roller, but do not do this too quickly after hanging since rolling will force out paste which is still wet and the pattern may be smeared.

A Handy Chart for Estimating Number of Single Rolls Required

Size of Room	Single Rolls of Sidewall: Height of Ceiling 8 ft.	Height of Ceiling 9 ft.	Height of Ceiling 10 ft.	Yds. of Border	Rolls of Ceiling
8x12	10	11	13	15	3
8x14	11	12	14	16	4
10x14	12	14	15	18	5
10x16	13	15	16	19	6
12x16	14	16	17	20	7
12x18	15	17	19	22	8
14x18	16	18	20	23	8
14x22	18	20	22	26	10
15x16	15	17	19	23	8
15x18	16	18	20	24	9
15x20	17	20	22	25	10
15x23	19	21	23	28	11
16x18	17	19	21	25	10
16x20	18	20	22	26	10
16x22	19	21	23	28	11
16x24	20	22	25	29	12
16x26	21	23	26	31	13
17x22	19	22	24	28	12
17x25	21	23	26	31	13
17x28	22	25	28	32	15
17x32	24	27	30	35	17
17x35	26	29	32	37	18

Above quantities are based on a roll of ordinary wallpaper which is 8 yds. long and 18 in. wide.

In the above figures all proper allowances have been made for matching.

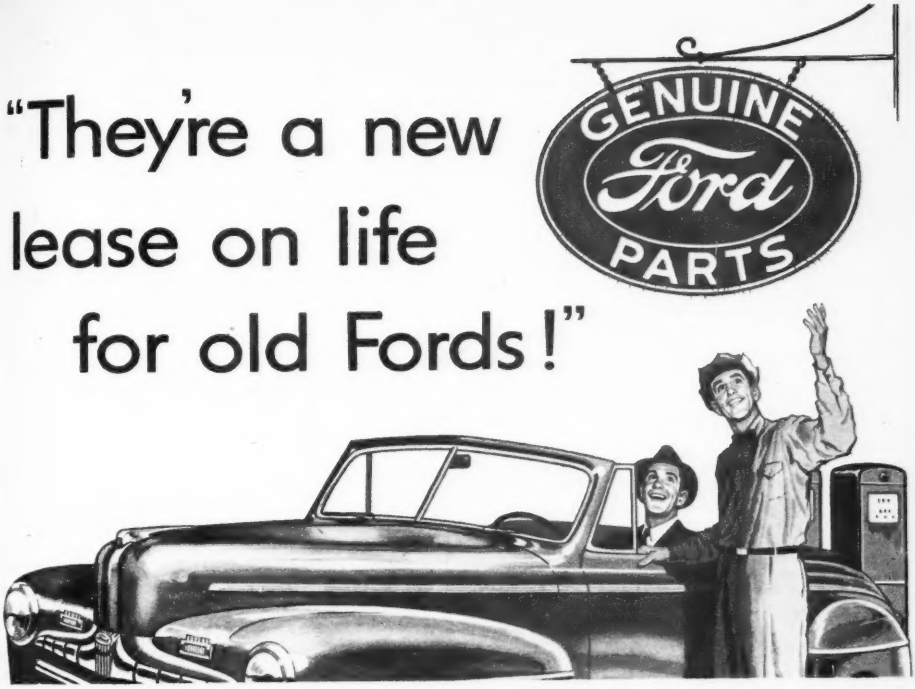
DEDUCTIONS

Deduct one single roll of side wall for every two ordinary size doors or windows or for every 50 sq. ft. of opening.

When hanging wallpaper over a fireplace or in a panel, place the largest design in the paper just below the top in the center of the panel or the space will appear unbalanced. Hang the center strip first, using a plumb line to be sure that it is straight. Subsequent strips should be matched to the right and to the left and hung from there around the room. •

Win a Golden Hammer. See the May issue.

"They're a new lease on life for old Fords!"



Genuine Ford Parts are just naturally the best parts you can put into your Ford. Here's why:

They're made right to fit right by the men who made your Ford . . . often on the same production lines as the parts now in your Ford. That's why they're easy to install, and that's one reason they save your time, your money, and your Ford. In addition . . .

They're Track Tested and proved by Ford engineers who give them the toughest imaginable tests. When they meet Ford's high standards, they become Genuine Ford Parts and you can be sure they're built to last and *last!*

GENUINE Ford PARTS

They're easy to get!
They're available at all Ford Dealers and the selected independent garages where you see this sign.

Insist on the parts that keep your Ford All Ford

GET THE WORLD'S LEADING
TV & RADIO CATALOG

FREE

236 VALUE-PACKED PAGES

1953 ALLIED BUYING GUIDE

Save on Everything in TV & Radio!

Everything for Experimenters, Builders, Amateurs, Servicemen, Engineers and Soundmen

Get ALLIED's big 236-page Catalog featuring the world's largest selections of latest top-quality electronic equipment at lowest, money-saving prices. See the newest in custom TV chassis, TV accessories, FM and AM radios, Amateur Equipment, High-Fidelity sound, P.A. systems, recorders, test instruments, builders' kits—plus thousands of parts, tubes, tools and books. Get more for your money—send today for your FREE 1953 ALLIED Catalog!

FREE CATALOG SEND FOR IT TODAY

ALLIED RADIO

ALLIED RADIO CORP., Dept. 6-DD-3
833 W. Jackson Blvd., Chicago 7, Illinois
☐ Rush FREE 1953 ALLIED 236-Page Catalog

Name_____
Address_____
City_____ Zone____ State_____

Car Care

[*Continued from page* 142]

to the water pump we find that its efficiency centers on the fan belt. Slippage causes less activity of the pump and means that water circulates in reduced volume. Few motorists realize it but if the fan bearing needs lubricating or is damaged it limits the action of the belt. This is the same as saying that it slows down the water pump.

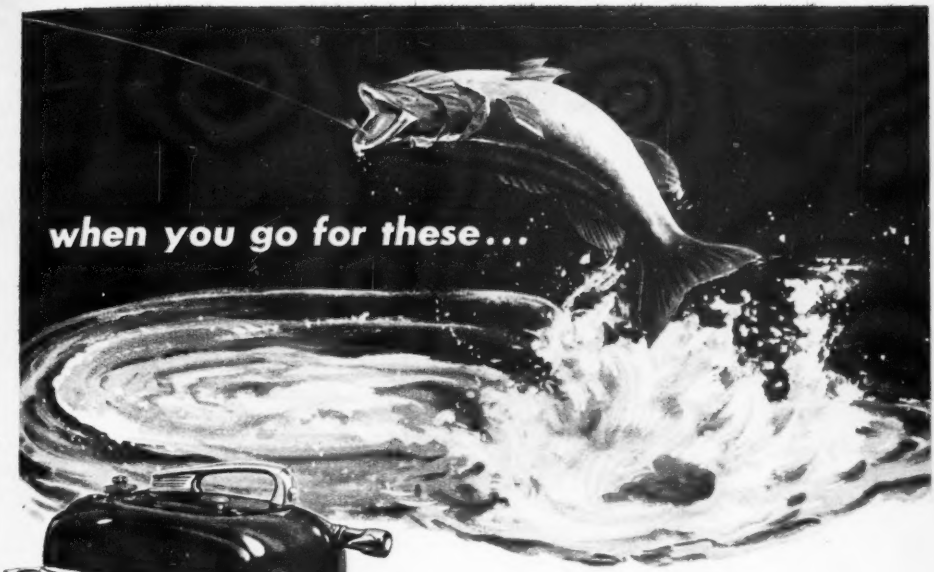
Power steering is one of the newest of the modern car's pumping devices. It derives its "umph" from an engine-driven hydraulic pump using oil. Because of the quantity of oil used a reservoir is required and of course a filter to keep the oil clean. Pressure sufficient to operate the power cylinder is dependent upon pump efficiency. You can tell if there is pressure in the system by noting if the pressure hose flexes when the engine is started and the steering wheel is turned to the right or left, but to tell how much pressure is being produced it is necessary to use a pressure gauge inserted with the shut-off valve between the pump and the pressure hose line. A broken coupling in the oil pump drive may be the cause of lack of build-up.

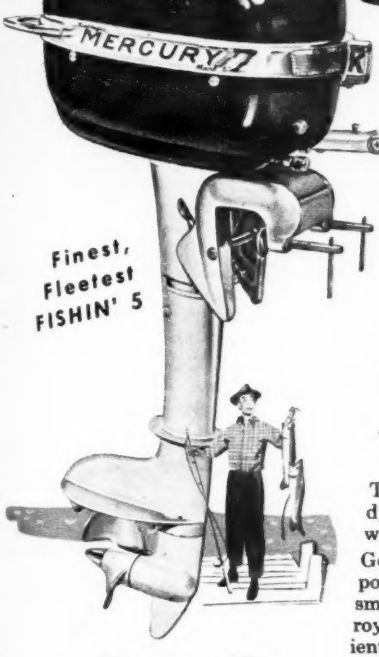
Early power steering systems used a steel coupling but later arrangements have one made of rubber. You can't switch from one to the other when replacement is needed. Slow pressure build-up hints of insufficient fan belt tension.

The power cylinder itself is something of a pump because its pistons are pumped by oil pressure flowing to the cylinder. Pressure to the cylinder is controlled by the flow control valve which may cause trouble by sticking. Like any other pump on the car the power steering pump may become noisy in operation. Leakage also may enter the picture. The sort of noise that develops when any engine is first started in cold weather may show up with a power steering pump. It is caused by congealed oil. After a few minutes of operation the noise should cease. No. 10W oil is used in these systems except where cars are operated in climates where still lighter oil is needed. Then the grade should be dropped to 5W.

We need not go into the pumps in the hydraulic portions of the automatic transmission (because this is work for the fellows who have been to school in Detroit) but keep them in mind when you are getting the broad picture of the car and its pumps. ●

See May issue for Golden Hammer Award





GO WITH THIS!

Finest, Fleetest FISHIN' 5

NEW

KIEKHAEFER

MERCURY Mark 5

with PUSH-BUTTON NEUTRAL CLUTCH

- 5 HP Alternate Twin
- 360 degree steering, Neutral Clutch
- Full weedless operation with Dual-Purpose Drive
- Superior idling for smoother, slower trolling
- Full Jeweled Power — ball and roller bearings throughout

To be sure you're there when that silvery streak of fury dynamites the surface of your favorite fishing spot . . . go with Mercury.

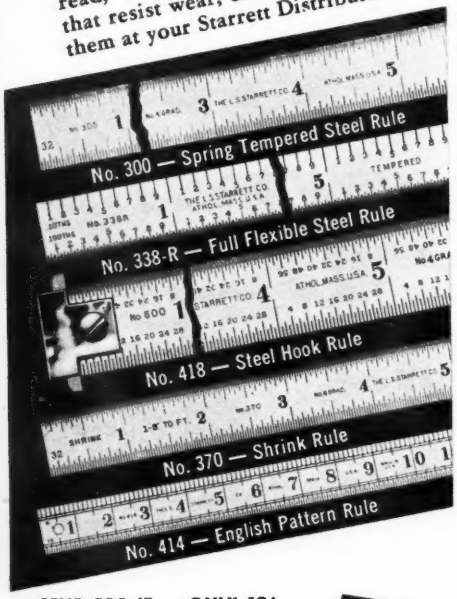
Go with the new Mark 5 . . . feel the smooth surging power as you open the throttle . . . throttle down to smooth hour after hour trolling. And when the battle royal starts you have all the advantage . . . the convenient new PUSH-BUTTON NEUTRAL . . . 360° steering for complete maneuverability . . . flashing speed to stay with him. And remember, your Mark 5 is "safety engineered" for your extra pleasure all season.

Write for FREE illustrated catalog, "Tomorrow's Outboard—Today" and see the new 1953 Mercurys at your dealer's. He's listed in the yellow section of your phone book. KIEKHAEFER CORPORATION, FOND DU LAC, WISCONSIN.

Features of Mercury motors are protected by issued or pending patents.

Starrett STEEL RULES

Whatever your need or preference, you'll find Starrett makes precisely the rule you need . . . lengths from ¼" to 72" and in a wide choice of widths, thicknesses and graduations. Light and heavy spring tempered steel rules, flexible or semi-flexible steel rules, stainless steel rules, hook rules, shrink rules . . . all with distinctive, easy to read, machine divided graduations that resist wear, eliminate errors. See them at your Starrett Distributor's.



SEND FOR IT — ONLY 10¢
Starrett "Tools and Rules" Book

50 page booklet shows the right tools for any precision measuring job. 100 pictures plus helpful reference tables. Send only one dime. Address Dept. MX.

THE L. S. STARRETT COMPANY • ATHOL, MASS., U.S.A.

TRADE MARK Starrett REG. U.S. PAT. OFF. STARRETT TOOLS
Buy THROUGH YOUR INDUSTRIAL DISTRIBUTOR
Prompt delivery. Dependable service. Quality products.
SINCE 1880 WORLD'S GREATEST TOOLMAKERS

MECHANICS' HAND MEASURING TOOLS AND PRECISION INSTRUMENTS
DIAL INDICATORS • STEEL TAPES • PRECISION GROUND FLAT STOCK
HACKSAWS, BAND SAWS and BAND KNIVES

Glamour Ceiling

[*Continued from page* 130]

application of this tile. First determine the square area of the ceiling you want to cover. Get this by multiplying the length by the width. Don't forget to make allowance for any possible offsets or irregular areas. The tiles, 12 in. square are packed 64 to a carton. In other words, each carton covers 64 sq. ft. A carton of these tiles costs about $8.00. Next apply 1x3 in. furring strips, 12 in. on centers, *across* the beams. If you can determine the exact location of the beams by chipping away the old plaster, then it's safe enough to nail them in place. Nails should be long enough to pass through the furring strips, through the white and brown coats of plaster, through the laths and into the beams or joists. Because it was impossible to determine the exact location of some of the beams in this particular installation (due to irregular spacing) a series of pilot holes were drilled into the furring strips. These holes were all countersunk and drilled to pass a No. 10, 3 in. flathead screw. Screws were soaped and an effort made to drive them home. If no positive purchase was obtained screws were moved into adjoining holes until the beam was located. The tiles were fastened to the furring strip by means of a nail, one in each corner. These nails, called Kolorpins, are painted a light ivory to match the color of the tiles.

One final word of caution—the tiles should be applied so that their grain runs *across* the furring strips. The direction of grain is indicated on the back of each tile by means of an arrow. However, if you happen to get a box of tiles which are unmarked you can readily determine the grain by trying to bend it. It will flex ever so slightly with the grain, and has practically no give when you try to bend it across the grain. •

Garden Gates

[*Continued from page* 135]

a flower pot design in the center boards. Pattern for the design can be made with a cardboard template and pencil. Note the attractive window box, plans for which are also included in this article.

Fig. 9 shows a design that also features a curved top member but it is easier to build than the design shown in fig. 6, inasmuch as no molding is required. The dowels are simply set in holes and glued. This gate is hung on hook and eye hinges and the latch is a matter of individual choice and availability.

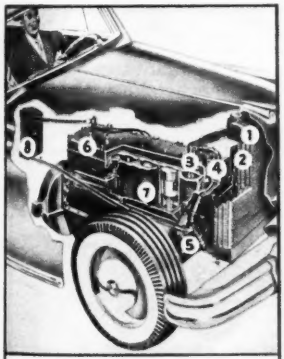
Plans for an attractive window box are shown in fig. 10. •

Cooling system failure—on the New York Southern State Parkway last summer—stranded these motorists.

NEW DU PONT ANTI-RUST

and Water Pump Lubricant

RETARDS RUST FORMATION, NEUTRALIZES CORROSIVE ACIDS



HERE'S WHERE Du Pont Anti-Rust works in your car's cooling system to neutralize acid, retard rust and corrosion, lubricate moving parts. 1. Radiator tanks. 2. Water tubes. 3. Thermostat. 4. Water pump. 5. Hose connections. 6. Cylinder head. 7. Cylinder wall. 8. Heater.

Just pour it in the radiator, leave it in!

Now, you can easily eliminate one hot-weather worry—failure of your car's cooling system. Most overheating is caused by clogging due to rust, and corrosive attack. New Du Pont Anti-Rust not only inhibits rust, but neutralizes acids and lubricates the water pump as well.

Best of all, liquid Du Pont Anti-Rust is simple to use. Just pour it in your radiator and forget it. It starts immediately to protect you against troublesome breakdowns and costly repairs. And Anti-Rust can't clog . . . is harmless to hose or metal parts. Get it at your service station or auto supply store—$1.00 at most dealers.

DU PONT

REG. U. S. PAT. OFF.

Better Things for Better Living . . . through Chemistry

DU PONT SPRING DRAIN-OUT:

Ask at your garage or service station about this complete summer protection. The service includes 1. Draining out winter-worn anti-freeze. 2. Thoroughly cleaning out rust and scale with Du Pont Cooling System Cleanser. 3. Adding Du Pont Anti-Rust and Water Pump Lubricant. 4. Checking all cooling system parts.

DU PONT COOLING SYSTEM CLEANSER

MOST PRACTICAL TOOLS YOU CAN OWN!

DREMEL *Electric* MOTO-TOOL—1001 USES AROUND THE HOME AND SHOP

Here is the fastest (27,000 r.p.m) most powerful tool in its class—THE ORIGINAL POCKET-SIZE MACHINE SHOP. A jack of all trades around the workshop, it is indispensable for carving, drilling, grinding, and for sharpening tools, scissors, kitchen knives, garden tools, lawn mower blades, etc. More versatile than a ¼" electric drill as it is so light weight (13 oz.) and handy for so many small jobs. Perfect for drilling small holes to hang pictures, installing cabinet hardware, hardwood trim. Powerful, 110 V. A.C.-D.C. motor. A tool built for years of lasting service.

MOTO-TOOL NO. 2 Offers more convenience and long life features for the money than any other handgrinder. Thousands of satisfied users. Moto-Tool No. 2 (with 1 emery wheel point) ---------- **$16.50**

KIT NO. 2 Includes Model 2 Moto-Tool and 23 Accessories (High-Speed Steel Cutters, Grinding Wheels, Polishers). Packed in sturdy hardwood case---------- **$23.50**

A PRECISION TOOL WIDELY USED IN INDUSTRY

For Sharpening Tools

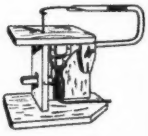
Speeds Up Repair Jobs

Great for Hobbyists

DREMEL

Only **$5.85** with 3 saw blades

FREE PLANS! Make your own jig saw. Complete plans and six project patterns included FREE.



FAMOUS DREMEL ELECTRIC MOTO-SAW

Here is a genuine craftsman's tool with dozens of household and workshop uses. It is perfect for all sorts of coping and jig saw work, making window valances, knick-knacks, hobby projects, etc. High-speed, reciprocating-type motor easily cuts asphalt and rubber tile, also masonite and formica—wood up to ¾". Perfectly safe for children—so easy to handle that women love to use it. Has only two moving parts, never needs oiling. A high quality tool used by craftsmen, tile layers, and carpenters.

Cuts scrolls like magic!

SEE YOUR DEALER! If he can't supply, order direct on five-day trial, money-back guarantee. Remit in full for postpd. shipment; or, send $2. now, pay postman balance plus postage and C.O.D.

DREMEL MFG. CO. Dept. 143-D RACINE, WIS.

Add A Room To Attic

[*Continued from page* 122]

board and ¼-in. underlayment hardboard. The 4x8-ft. sheets of insulation board were for sound deadening and to raise the floor to the same level as that of the existing stairway. The insulation board was tacked into place with 4d coated box nails. Then the underlayment was laid in place and 2 in. annularly-grooved nails driven through the hardboard and insulation board into the rough flooring. These nails were spaced 6 in. on center both ways. A 15-pound felt was put down and the asphalt tile laid with a recommended adhesive.

Attention was then turned to finishing off the closets and applying interior trim. The closets were lined with a smooth, factory-finished insulation board. Sliding doors were built for each closet. These were framed out of 1x4's and covered with $\frac{3}{16}$-in. tempered hardboard. This same hardboard treatment was given doors leading to storage areas. The hardboard was painted with a dull enamel, colored with raw sienna and burnt umber to closely match the color of the walls.

Trim around doors, windows, and baseboards was kept to a minimum. It was given a natural finish. The baseboard is 2¾-in., while the trim around the windows, doors, and closets is 2¼-in. The trim was filled with platinum pentachrome and finished with a clear-finish, semi-gloss varnish coat.

A final tip—consult your local lumber dealer. He'll be happy to recommend the best materials for the job, give you free cost estimates and help you select the proper tools. It would be impracticable to list a general bill of materials, inasmuch as quantities and sizes will depend on the size of the attic to be converted. However, so that you can gain some idea I am including the list of materials I used to gain 500 square feet of space. •

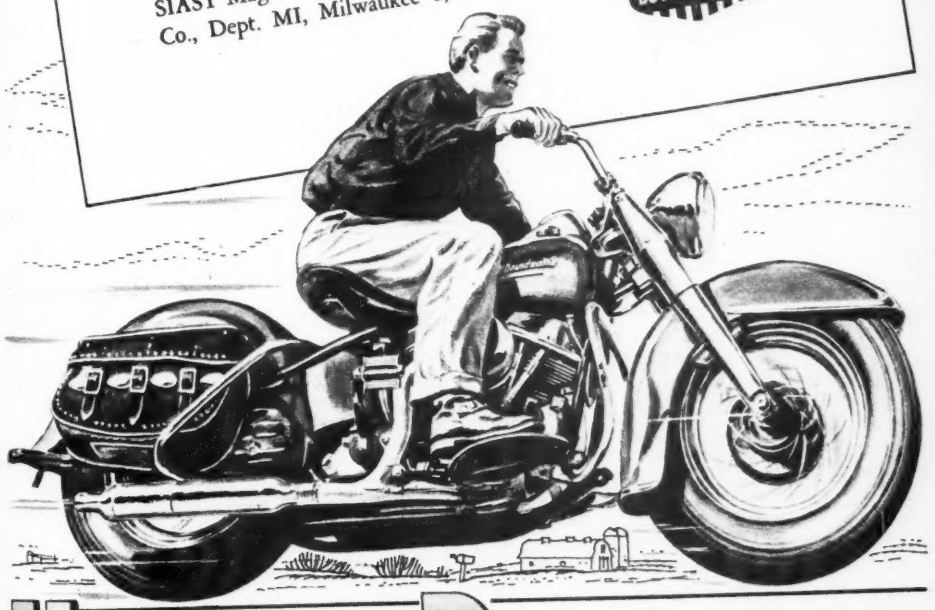
BILL OF MATERIALS

Footage	*Material*
43 bd. ft.	2x4 dimension lumber
17 bd. ft.	1x2 strips
60 bd. ft.	1x3 strips
22 bd. ft.	1x4 strips
37 bd. ft.	1x8 boards
320 lin. ft.	Interior trim
20 rolls	Insulite Insulating Wool (Thick Roll Blankets, 15" wide)
350 sq. ft.	Insulite ½" Durolite Plank
192 sq. ft.	Insulite ½" Durolite Interior Board
416 sq. ft.	Insulite Leatherite Hardboard
352 sq. ft.	Insulite Graylite Wallboard
	Nails and staples to apply these materials (average 8 lbs.)
	1 gallon paint
	2 paint brushes
	1 quart turpentine

"Takes miles in its stride"...

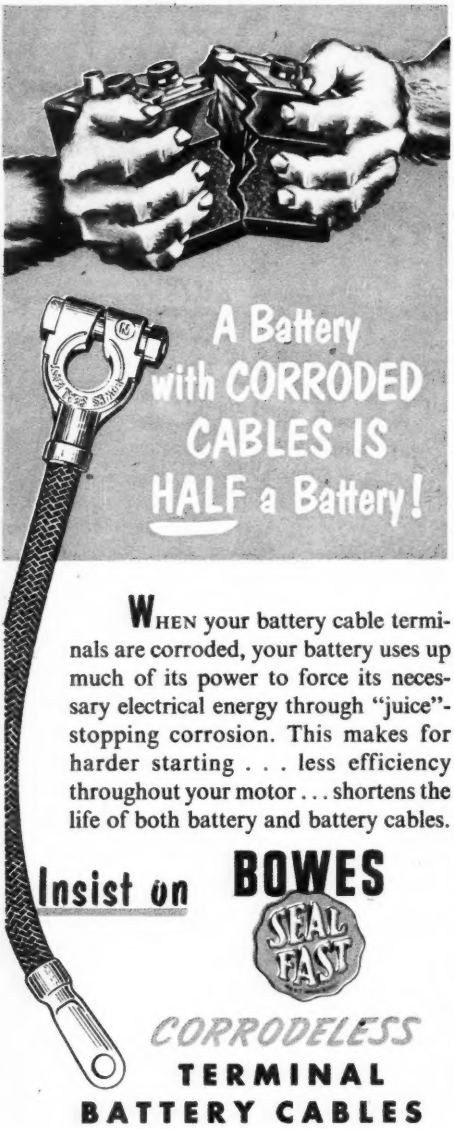
HERE'S real get up and go . . . and two-wheeled luxury . . . as you twist the throttle on the greatest motorcycle ever. It's years ahead in design . . . miles ahead in power. The improved 55 HP 74 OHV motor features rotating valves, hemispherical combustion chambers and hydraulic valve lifters. And you'll never match this powerful beauty for sheer riding comfort on 5-mile jaunts or 500-mile trips. Visit your Harley-Davidson dealer today. Bring along a buddy. Write for free illustrated literature. Send 25 cents for your copy of the action-packed, picture-filled ENTHUSIAST Magazine. Harley-Davidson Motor Co., Dept. MI, Milwaukee 1, Wisconsin.

Get the Best BUY AMERICAN



HARLEY-DAVIDSON

HYDRA-GLIDE®



WHEN your battery cable terminals are corroded, your battery uses up much of its power to force its necessary electrical energy through "juice"-stopping corrosion. This makes for harder starting . . . less efficiency throughout your motor . . . shortens the life of both battery and battery cables.

Insist on **BOWES** SEAL FAST

CORRODELESS
TERMINAL BATTERY CABLES

Bowes "Seal Fast" battery cable terminals positively will not corrode, and are specially engineered to fit the battery posts snugly, assuring longer cable life and full power from your battery. Stop battery cable trouble before it begins . . . *and* . . . increase the life of your battery. Your Bowes dealer can supply you.

BOWES "SEAL FAST" CORP., INDIANAPOLIS 7, IND.
BOWES PACIFIC CORP., RIVERSIDE, CALIF.

Kinescope Photos

[*Continued from page* 148]

ning lines were distinctly visible. The contrast control was stepped up slightly but not to its maximum. Because TV pictures tend to be rather flat, it is a good idea to increase developing time slightly.

A between the lens shutter will give you the best results. If you have an f-4.7 lens an exposure of 1/25th works well. If you have a faster lens, say an f-3.5, you might shoot at 1/50th of a second to be sure to stop any action. A higher shutter speed is not recommended. The photo at upper left shows Cesare Sieppi of the Metropolitan Opera Company. It was taken with a Compur shutter at 1/25th and f-4.7 on Panatomic X film. The other pictures were also taken at f-4.7 on Panatomic X film but their rather interesting flaws are due to the fact that they were taken with a curtain or focal plane shutter.

All TV receivers in the United States are standardized so that the image on the screen is formed by 525 lines—*regardless of the size of the screen.* Every other line on the screen is scanned by an electron beam in 1/60th of a second. You can readily see, therefore, that if you use a camera with a focal plane shutter which exposes the film by means of a moving slit, the camera will pick up the odd effects shown in the other three photos. Variations of this phenomenon are produced when the position of the camera is changed so that the curtain travels up instead of down, from right to left or from left to right. •

—*Dan Rubin*

How To Stop A Drip

[*Continued from page* 107]

The first operation of course is to turn off the water and remove the entire valve stem assembly. Then a drill tap (the smallest which will fit inside the old seat) is selected and an aligning guide is installed on the tool holder. A ratchet wrench, supplied with the kit, turns the combination tap and drill until the tap bottoms or it can no longer be turned. Next step is to remove the tap and use a dressing tool. This smooths the seat and removes any burrs left by the tapping operation. Final step consists of inserting a valve seat (a generous assortment comes with the kit) in the tool holder and screwing it home with the wrench. That about completes the operation, except for installing a new washer and replacing the valve stem and handle assemblv Now you can sleep at night.—*R. B.*

Here's a New Portable Jig Saw with a Real Motor made by Black & Decker

And it converts quickly to a handy, stationary (table model) Jig Saw

Only $49.50 complete with 5 different blades

(coarse tooth, fine tooth, 2 metal-cutting, knife blade)

There's nothing like the Black & Decker Utility Portable Jig Saw! It does the work of a Jig Saw, Sabre Saw, Keyhole Saw, plus most Band Saw operations! Fits in the palm of the hand—all you do is guide it! Or, it mounts in an accessory table in 10 seconds. It's perfect for home repairs, plumbing, hobby projects, electrical work, furniture, signs, displays, floor-covering installations, etc. A specially-designed B&D motor, custom-made for the tool, assures smooth, steady operation. Try this handy, new Black & Decker Utility Jig Saw at your nearest hardware, building supply, appliance or department store!

Jig Saw Converts to Table Model in Seconds

With the Accessory Table, you have a bench model saw that supports the work while you cut. Improves accuracy and frees both hands for guiding. Miter Gage and Rip Fence assure accurate angle cuts and smooth, even ripping. Price, complete, only $14.95.

Cut these materials in a jiffy with this B&D Jig Saw

- ★ Hardwood, softwood, plywood
- ★ Ferrous metals, non-ferrous metals
- ★ Plastics, leather, rubber
- ★ Composition boards, insulating materials

Here's why the B&D Portable Jig Saw is your best buy!

Sabre-type blade makes pocket cut without need of "entrance" hole.

Compact, lightweight . . . fits the palm of the hand. Guides easily.

Fan cools motor and directs air stream to blow sawdust away from guide line.

HARDWARE WEEK SPECIAL

B&D Utility 6" Heavy-Duty Saw Plus Depth-and-Bevel Attachment . . . BOTH FOR ONLY . . . $59.50

Black & Decker

UTILITY PORTABLE ELECTRIC TOOLS

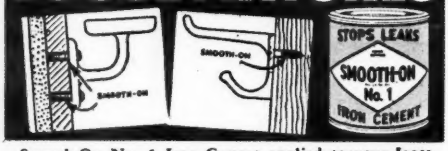
FREE! Book of hints to make home repairs and hobby projects easier. Mail to: THE BLACK & DECKER MFG. CO., Dept. H4X, Towson 4, Md.

Name ----------

Address ----------

City ---------- Zone ---- State ----------

TIGHTEN LOOSE FIXTURES



Smooth-On No. 1 Iron Cement applied to your loose hinges, door handles, coat hooks, drawer pulls, knobs, casters, bathroom fixtures, tool and cutlery handles, will tighten them and *keep* them tight. • Get Smooth-On No. 1 in 1¾ oz., 7 oz., 1 lb. or larger sizes at your hardware store. If they haven't it, write us.

FREE Repair Handbook

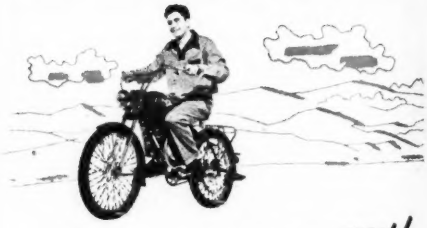
40 pages, 170 illustrations. Shows you how to make numerous household repairs quickly and easily. Directions are simple, brief.

50' 347

SMOOTH-ON MFG. CO., Dept. 69D
570 Communipaw Ave., Jersey City 4, N. J.

Do it with
SMOOTH-ON
THE IRON REPAIR CEMENT OF MANY USES

have your own **DELUXE TRANSPORTATION**



get a **WHIZZER** *NOW!*

Be free to go anywhere! Your great new 1953 Whizzer will take you comfortably, swiftly, economically. You're your own boss with a Whizzer.

Lead your friends to more fun! Your rugged dependable Whizzer motor bike will put you out in front, the envy of all your friends.

Ride a Whizzer today. See your Whizzer dealer. Learn how easily you can own a Whizzer, how little it costs to operate, how much real pleasure it can mean.

• 3 h.p. • 5-35 m.p.h.
• up to 100 miles per gallon

Free illustrated booklet on request.

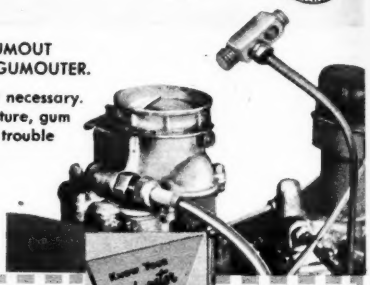
WHIZZER MOTOR CO., 324 S. Sanford, Pontiac, Mich.

CARBURETOR GUMOUT CLEANING

The complete job takes just 20 minutes with GUMOUT and the easy-to-use applicator called the GUMOUTER.

Don't dismantle the carburetor. It's no longer necessary. GUMOUT cleans out all dirt, muck, moisture, gum and varnish—eliminates a frequent cause of engine trouble and roadside breakdowns. Your carburetor cleaned with GUMOUT will give smoother performance and gasoline economy.

Get GUMOUT and the GUMOUTER from your favorite auto supply store or order direct. Write for the free *Carburetor Handbook*.



GUMOUT DIVISION
Pennsylvania Refining Co.
Cleveland 4, Ohio
Butler, Pa. Edgewater, N. J.

Refiners of Penn Drake Petroleum Products since 1880

penn drake

GUMOUT DIVISION
Pennsylvania Refining Co.
2684 Lisbon Road, Cleveland 4, Ohio

Please send:

.....Pints of GUMOUT @ $1.50
.....GUMOUTER @ $4.75
.....Carburetor Handbook free

Name.....

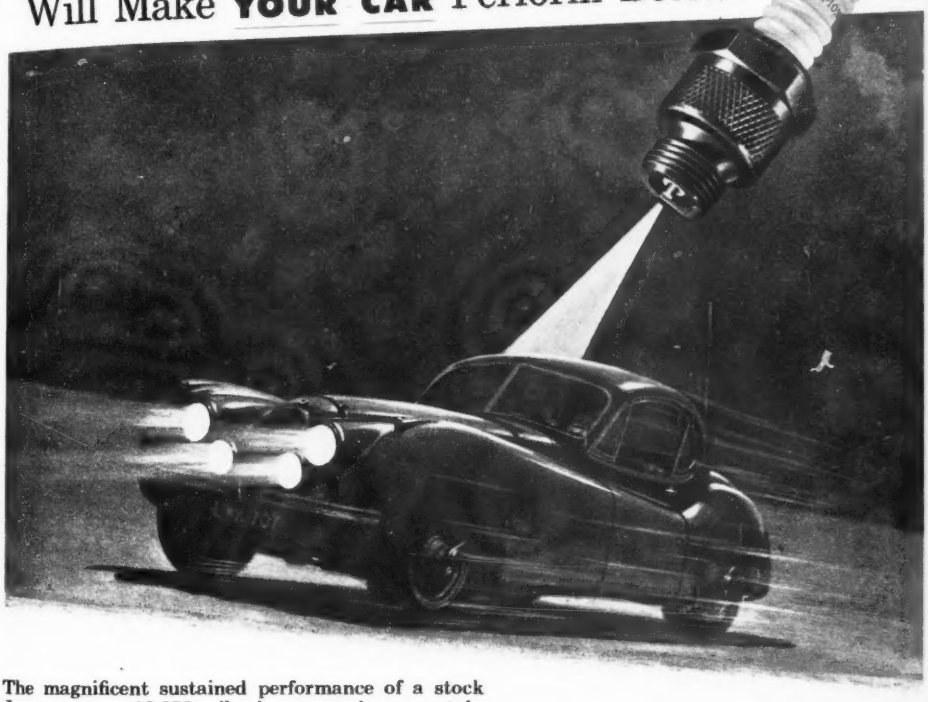
Address.....

City.....Zone.. State.....

Spark Plugs that Perform **LIKE THIS**—

100.31 M.P.H. FOR 7 DAYS AND 7 NIGHTS

Will Make **YOUR CAR** Perform Better!



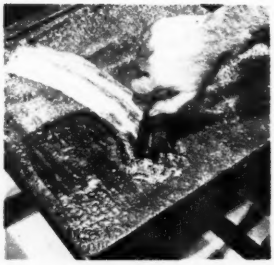
The magnificent sustained performance of a stock Jaguar coupe, 16,852 miles in one week, was established with Champion Spark Plugs—standard equipment for all Jaguar cars. This car is a duplicate of the Jaguars that have become a familiar sight on American streets and highways.

The Champion Spark Plugs used in this record-smashing endurance run are identical—in materials, design and workmanship—to the Champions available for your car. More overpowering evidence that Champions can give you the best performance and dependability of which your car is capable! So try a set of Champions today! You will never again be satisfied with ordinary spark plugs.

CHAMPION SPARK PLUG COMPANY, TOLEDO 1, OHIO

Better by Far for EVERY CAR Regardless of Make or Year

How to Get Smoother, Slicker Paint Jobs



Step 1. *Prepare surface.* Remove all chipped and peeling paint or varnish down to bare wood. You can do this easily and quickly with Strypeeze . . . the *guaranteed* paint remover that stays wet longer, clings to upright surfaces, doesn't harm hands.

Step 2. *Rebuild broken corners, fill nicks and holes.* A powder-form plastic putty, Savogran Wood Putty, is ideal for this. You can form it, tool it . . . and it doesn't shrink. For cracks in plaster, use Savogran Crack Filler. It's the original patented quick-hardening water putty.

Step 3. *Start job with clean brushes.* If it's an old brush, clean it before you begin painting. Clean all brushes after painting and whenever you change colors. Kwikeeze, the Liquid Brush Cleaner, softens *hard* brushes in minutes . . . cleans out fresh paint instantly! May be reused.

Whenever you're painting, you need

SAVOGRAN

REG. U. S. PAT. OFF.

PRODUCTS . . . at better paint & hardware stores

Write for free helpful literature

SAVOGRAN CO., Dept. 32, 25 Huntington Ave., Boston 16, Mass.

Lumber

[*Continued from page* 104]

Nominal Size	Actual Size
1x 2"	¾x 1⅝"
1x 3"	¾x 2⅝"
1x 4"	¾x 3⅝"
1x 5"	¾x 4⅝"
1x 6"	¾x 5⅝"
1x 8"	¾x 7½"
1x10"	¾x 9½"
1x12"	¾x11½"

The difference between the nominal and actual size is due to two factors, shrinkage and planing. Some mills plane their wood to a slightly different standard and that is why you'll sometimes find that a so-called 1 in. board in one lumber yard is actually only ¾-in. thick while in another nearby yard it may measure $\frac{13}{16}$ or $\frac{27}{32}$-in. thick.

Plywood is actually ⅛ to ¾-in. thick, as labeled, except for the kind known as lumber core which is $\frac{13}{16}$-in. However, the plywood manufacturers are beginning to standardize and now lumber core is mainly produced in the regular ¾-in. size.

Wood which is more than 2 in. thick is called lumber, and again the nominal sizes do not correspond to the actual sizes. Here is how they generally differ:

Nominal Size	Actual Size
2x 2"	1⅝x 1⅝"
2x 3"	1⅝x 2⅝"
2x 4"	1⅝x 3⅝"
2x 6"	1⅝x 5⅝"
2x 8"	1⅝x 7½"
2x10"	1⅝x 9½"
2x12"	1⅝x11½"

Lumber is generally available in lengths from 4 to 24 ft. in multiples of 2 ft. Boards listed in the first part of this article are available in the same lengths and multiples as lumber.

Heavy wood used for supporting great loads is termed timber. The following table shows their listed sizes and their actual physical sizes:

Nominal Size	Actual Size
3x4"	2⅝x3⅝"
4x4"	3⅝x3⅝"
4x6"	3⅝x5⅝"
6x6"	5⅝x5⅝"
8x8"	7½x7½"

Timber also comes in multiples of 2 ft. in sizes up to 24 ft. long.

Select softwood boards suitable for a natural finish are graded A. An occasional minor blemish will put it into grade B. Grades C and D possess increasingly more knots and

[*Continued on page* 171]

ENTER $1,000.00 CASH SYNCRO SANDER CONTEST

IT'S EASY! IT'S FUN! NOTHING TO BUY!

WIN one of these 43 CASH PRIZES!

1st Prize **$500**

2nd Prize **$200**

3rd Prize **$100**

40 Prizes $5 Each!

HOW TO ENTER

(1) Find the correct "missing" Jingle Words. It's fun—easy! Look for them *now* below sander *picture* in *type* following "Syncro Sander Features." (2) Complete the Contest Sentence in 15 additional words or less. (3) Give hardware store name. ***That's all!*** Use "Ad Entry Blank" or plain paper—send it direct to Syncro. OR use Entry Blank printed in Free Contest Folder—get at dealers' or mail Ad Coupon. Send no money — no wrappers — and there's NOTHING TO BUY!

BRIEF CONTEST RULES

• **Judges:** WALT DURBAHN, master craftsman, TV star; RUSSELL JOHNS, Publisher; HARRY J. HOBBS, Publisher. Their decision is final. • **Prizes Awarded** on combined basis of correct Jingle completion plus aptness of thought in finishing Contest Sentence in 15 additional words or less. • **Period:** Contest starts March 1, 1953, ends May 31, 1953. All envelopes bearing Entries must be post-marked not later than midnight May 31, 1953. • **Prize Winners** notified and paid soon after June 15, 1953. • **Contest Limited** to Continental United States.

SYNCRO SANDER FEATURES:

Sands 10 times faster than hand-sanding. SMOOTHER finish, too! Proven best for vertical and overhead use because it is so powerful, so much LIGHTER. Syncro is the only electric sander with Double-Arc motion which cleans as it sands. Works so easily you "finger-guide-it!" Save money and TROUBLE doing your own refinishing at home with Syncro. Just remember—Syncro is the only sander giving you a GUARANTEE which says, "Syncro Power Units guaranteed against burn-out all during your ownership or replaced free!" (The Missing Jingle Words are among those you have just read).

Isn't this FUN! Nothing to buy — no wrappers or labels to send—just a few minutes of your time and you may WIN one of the 43 CASH PRIZES totaling $1,000! Just correctly complete the Missing Words Jingle—finish the Sentence (both shown in Coupon-Blank below) and mail YOUR Entry now! Or send Coupon for Free Contest Folder—or drop in at your nearest hardware to TRY a Syncro Sander and get a FREE Contest Folder. *Hurry!*

$1,000 CASH CONTEST FOLDER FREE AT HARDWARE STORES OR SEND COUPON!

Use As ENTRY BLANK or INFORMATION COUPON

Fill-in missing words of **CONTEST JINGLE:**

SYNCRO SANDER HAS A LOT OF FEATURES OTHERS HAVEN'T GOT:

S_____ER, L_____ER, _____-FREE

PLUS AN HONEST _____EE!

Complete This SENTENCE in 15 additional words or less: I LIKE SYNCRO SANDER BECAUSE_____

Hardware Store Name_____

MAIL TO SYNCRO CORPORATION, OXFORD, MICHIGAN
Contest Dept. W-43

Your Name_____

St. & No._____

City_____ STATE_____

☐ I'll enter LATER Send FREE FOLDER

SYNCRO ELECTRIC SANDERS

SYNCRO CORPORATION
CONTEST DEPT. W-43
OXFORD-MICHIGAN USA

SYNCRO POWER UNITS GUARANTEED AGAINST BURN-OUT DURING YOUR OWNERSHIP OR REPLACED FREE!

If You Make Painting a Hobby-

You'll get a lot more real satisfaction and pride of ownership out of a home that is clean and neat and trim in a fresh coat of paint! Pays its own way by improving your property, too!

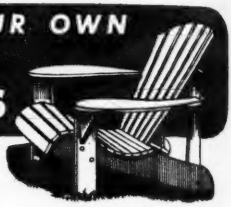
Because Archer Pol-mer-ik contains polymerized oil, it gives you a tougher, more durable paint film than ordinary linseed oil. When you reduce your paints with Pol-mer-ik, they brush easier, level better, and give you a smoother, dirt-resisting finish. Wonderful brush conditioner, too!

Handiest single product in your house or shop. Does the job of a dozen specialized products. A few of

POL-MER-IK'S 101 HANDY USES:

ARCHER
Pol-mer-ik
LINSEED OIL
PROTECTS MOST EVERYTHING

BUILD YOUR OWN LAWN CHAIRS



Build 'em yourself with Easi-Bild *full-size* patterns . . . and finish with amazing Plastic Wood. Simply trace pattern on wood, saw and assemble. No special skill needed. Plastic Wood handles like putty, hardens into wood! Can be sawed, sanded . . . takes paint and other finishes!

EASI-BILD ®
Pat. No. 32—25¢

PLASTIC WOOD
CELLULOSE FIBRE FILLER
IN CANS OR TUBES

Get Pattern #32 at any hardware counter. Or send 25¢ to: Plastic Wood, Box 215, Pleasantville, N. Y.

P.S. Pulleys, hinges, locks and latches work better with 3-IN-ONE Oil

---

PUMP WATER *FAST!*

DRAIN WASH TUBS, CELLARS, CISTERNS
IRRIGATE—FILL TANKS—DRAW WELL WATER

Pumps 2800 GPH. 420 GPH at 75' High or 1600 GPH from 25' well. Sturdy, Rustproof Alloy Metal. Six Blade Impeller. Uses any 1/8 to 1/2 H.P. Motor. Will not leak or clog. Fits any garden hose. Immediate Money Back Guarantee. Send Check, M.O., or C.O.D. **9.95** IN U.S.

MOORE MANUFACTURING CO.
SWEDESBORO 3 NEW JERSEY

BUILD YOUR OWN ARC·WELDER

NO REWINDING NECESSARY

For Light or Heavy Work

We show you how to build this NEW Powerful welder without rewinding. Uses coils taken from old auto generator. Has 20 heats. Operates on either 110 or 220 volts A. C. Learn to weld. Make money welding for others. Complete plan and valuable catalog 35c. **LEJAY MFG. CO., 3314 LeJay Bldg., Mpls. 8, Minn., or 928-1st Ave. So., D14, Seattle 4, Wash**

ROTO-HOE

2 h. p. (as shown) only $134.

Useful All Year Around
Complete Interchangeability

America's Most Usable Garden Tool

MORE WORK—WITH LESS EFFORT! ROTO-HOE

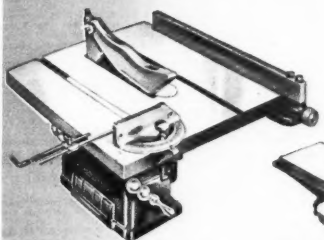
ROTO-HOE offers you the complete garden tool—it Tills, Cultivates, Composts, gives you portable power 'most anywhere. The powerful dependable Lauson 2 h.p. gasoline motor rotates 15 specially-hardened teeth at high speed, thoroughly mixing and aerating soil up to 6" deep. You will find that gardening can be a pleasure—the hard work is removed.

COST? That's even more surprising—the same low $134 price established in 1947 for the complete ROTO-HOE basic unit shown above.

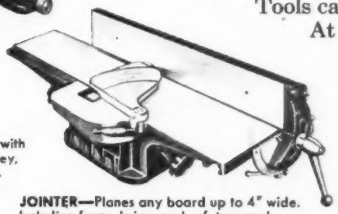
YEAR 'ROUND Attachments do many extra jobs: Mow lawn, trim, edge, mulch, blow snow. All are low in cost too. Investigate this real gardening value. See your dealer for a demonstration; write for free illustrated circular to—

ROTO-HOE & Sprayer Co., Box 54, Newbury, Ohio

You Can Own Any Of These Fine DELTA Tools FOR LESS THAN $50*!



CIRCULAR SAW—8" tilting table saw with rip fence, miter gage, guard, arbor pulley, splitter, anti-kickback fingers and blade. Big capacity, less motor, a great value at **$41.50**



JOINTER—Planes any board up to 4" wide. Including fence, knives and safety guard—a fine finishing tool, less motor, for **$38.50**

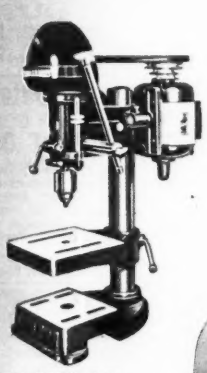
Did you realize it costs so little to own a DELTA home workshop?

Any of these famous Delta Homecraft Power Tools can be yours for less than $50*. At these prices there's no need to shop around—you *can* afford Delta quality.

These are standard Delta Homecraft tools with all the Delta quality features. Make this test: ask the professional woodworkers—they'll tell you that sooner or later you'll be satisfied with nothing but Delta. So, save money . . . start with Delta now!

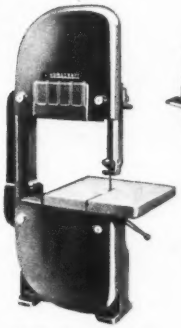
Write for catalog: *Delta Power Tool Division, Rockwell Manufacturing Company, Pittsburgh 8, Pa.*

***Motors and accessories extra.**

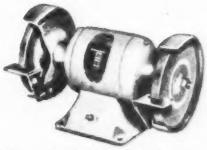


DRILL PRESS—Drill, mortise, rout, carve, shape and grind on this 11" drill press. With ½" Jacobs chuck spindle, belt and motor pulley, less motor, just.....**$48.95**

SCROLL SAW—A fine 16" tool to start the youngsters. Cuts intricate curves. Including arbor pulley, three blades and pulley guard, less motor, **$39.50**



BAND SAW—10" size, for curve or straight line cutting. With wheel guard, blade and arbor pulley, less motor.....**$46.95**



GRINDER—A real asset for your workshop or garage. Buffing, polishing and grinding wheels at small extra cost. Includes motor, guards and tool rests.....**$39.95**

SANDER—You can use it to sand, drill, grind and buff. 8½" disk diameter, less motor and miter gage. **$13.50**

Independent HARDWARE STORE

See these tools at your Delta Dealer (listed under tools in your phone book), leading department stores . . . and at your IRHA store.

See the new Deltashop at your dealer's, too—the four most used tools in a single one-motor combination that takes up only a 3-foot square. Buy it a tool at a time, or the whole unit with floor stand, less motor, for only $209.95

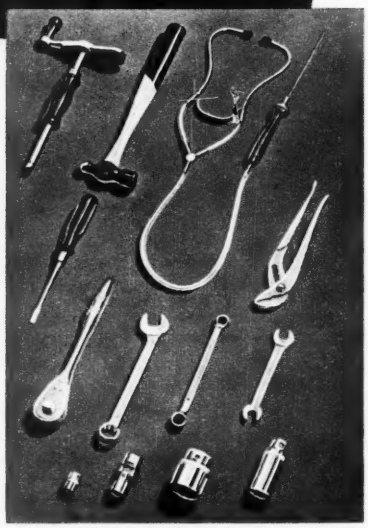
DELTA QUALITY POWER TOOLS

Another Product of **Rockwell**

DELTA MILWAUKEE

DELTA QUALITY MAKES THE DIFFERENCE

6 good reasons why you should buy Herbrand VAN CHROME Tools



Herbrand offers...

1. ***QUALITY:*** Since 1881 Herbrand has been known deservedly as the "Aristocrat of Tools". Herbrand is one of the oldest manufacturers of automotive hand tools in the industry.
2. ***MATERIAL:*** For good tools, quality material must be used. Herbrand uses only the finest of Nylon, Tenite II and special analysis high alloy steel.
3. ***DESIGN:*** Herbrand designs provide an ideal combination of function, strength, comfort and eye-appeal.
4. ***FINISH:*** All Van Chrome tools are machined, polished, and finished by the latest in new equipment.
5. ***DEVELOPMENT:*** Herbrand has been a continuous leader in research and development of new tools and in the improvement of existing tools.
6. ***VALUE:*** Herbrand prices are maintained at the lowest level consistent with Herbrand high standards of quality.

Herbrand Van-Chrome Tools are the choice of professional mechanics everywhere. Never surpassed, and seldom equalled, they represent highest value and quality. Backed by an unqualified guarantee for workmanship and material Herbrand is the best buy in quality tools. See this complete line at your Herbrand distributor — today!

★ **Send 10c for Herbrand's completely illustrated 95 page catalog No. 54-MS**

HERBRAND

Herbrand

VAN-CHROME TOOLS

THE BINGHAM-HERBRAND CORPORATION

Fremont 16, Ohio

BUILD YOUR OWN POWER TOOLS - TILT/ARBOR SAW, BANDSAW, BELT SANDER

SAVE $50 OR MORE

Exclusive GIL-BILT Build-It-Yourself Features

- No machining—build easily with hand tools only
- No blueprint reading—step-by-step pictorial plans, full scale patterns, actual photographs
- Sturdy wood, aluminum and steel construction
- Capacity and performance of commercial saws selling for $60 and up

GIL-BILT 10-INCH TILTING ARBOR SAW

- 27x28 in. table, 13½ in. capacity in front of blade
- 10 in. blade cuts 3¼ in. deep, tilts full 45 degrees
- Floor model 34" high, table always stays level
- New Departure ball bearing arbor, ⅜" precision shaft turned down for ⅝" bore blades, alum. housing, shipped ready to run
- Jackscrew and 4½ in. dia. handwheel lowers and raises blade
- Cast aluminum miter gauge and self-aligning rip fence guide

GIL-BILT Metal Parts Kit includes Plans, ball bearing arbor, miter gauge and bar, rip fence guide, dado insert, lock knobs, jack-screw mechanism and handwheel, and all other metal parts (less blade)----------$21.95
Same Kit with 10" Combination Blade_$24.90
Same Kit with 8" Combination Blade_$23.90

GIL-BILT 12-INCH BAND SAW

- Cuts to center of 24 inch circle
- Handles stock up to 6 inch thick
- 18x18 inch table tilts 45 degrees
- Lower wheel and drive pulley runs on sealed New Departure Ball Bearings; Upper wheel runs on two ⅝" bore Oilite Bronze bearings
- Upper wheel tension and tilt mechanism of cast aluminum, completely assembled
- Upper and lower blade guides. Each has ball thrust bearing, self-lub bronze jaws
- Rigid cast aluminum wheels fully machined ready-to-install. Heavy rubber tires
- Uses standard 78 inch blade up to ¾ in. wide
- Fully enclosed mechanism for utmost safety

GIL-BILT Metal Parts Kit includes Plans, rubber tires, aluminum wheels, ¼ in. blade, ball bearing spindle, tilt mechanism, blade guides, table tilt segments, and all other metal parts----------$21.95

Return Kits in 10 days for refund if not satisfied.

(Prices include postage within 300 miles. Over 300 add 5%)

Also available—Plans and Parts Kit for 18" Band Saw, Belt Sander and 8" Tilt/Table Saw. Order Plans at $1.00 each—Sent postpaid anywhere in the world or write for FREE descriptive catalog.

GILLIOM POWER TOOLS P.O. Box 1-RD, Lambert Field St. Louis 21, Missouri

Send for this Giant Automotive Catalog

& Save to 50% on All Parts & Accessories

1953 EDITION JUST OUT!

World's largest Auto Accessory & Parts Catalog. Over 50,000 items:—Hollywood Accessories. Hi-Speed Equipment, Rebuilt Engines, Everything for all cars & trucks. We have that Hard-To-Get part. Jam packed with bargains. Completely illustrated. (134 Pages) Send 25c (Refundable).

J. C. Whitney & Co., 1917-TM Archer, Chicago 16

Make Money SELLING Eshelman Tractors and Doing GARDEN WORK

HARROWS HAULS SPRAYS SAWS DOZER MOWS CUTS ROLLS TILLS SNOW PLOW

ESHELMAN FOR BETTER LAWNS and GARDENS

FROM $95 PLUS TOOLS

Also Power Reverse. Women can operate it. Free Catalog. Write nearest branch:
ESHELMAN CO., Dept. 13-4
119 Light St., Baltimore 2, Md.
333 N. Michigan Ave. Chicago-1, Ill.
105 Lake St., Reno, Nev.

Holds the Screw! Drives it too!

Unconditionally Guaranteed

Quick-Wedge SCREW-HOLDING SCREWDRIVER

Ask for it at your Dealer

Kedman Co., 239 S. 5 W., Salt Lake City, Utah

Lumber

[*Continued from page* 166]

cracks and are generally used when the wood is to be covered or painted.

Lumber used for general utility and construction is called common lumber and is graded 1 for clear material, 2 for wood with slight blemishes while 3, 4, and 5 contain an increasingly greater number of defects such as open knots, cracks, etc., and are usually to be painted or covered to hide the defects. Waste, of course, increases as the number of the grade goes up.

Most of the wood sold in the average lumber yard is softwood and is graded A, B, C, etc., as already explained. They consist of the firs, pines, spruces, cedars, and redwoods.

Hardwoods are generally used for furniture construction and are more expensive than the softwoods. They are graded "first, second, select, etc.," according to blemishes and other faults. Typical hardwoods are, maple, walnut, oak, birch, gum, chestnut, hickory and cherry.

Lumber, except for 2x4's, 2x3's and furring strips, is sold by the board foot. A board foot is a piece of wood which is 1 in. thick and 12 in. wide. If you buy a board and the dealer says, "Let's see now. That'll be 25 cents a foot, $3 please," it means you've purchased a board that is 12 ft. long, 1 in. thick and 1 ft. wide. If the board was 2 in. thick you'd pay $6 for the same length and width. •

—*Harold Epstein*

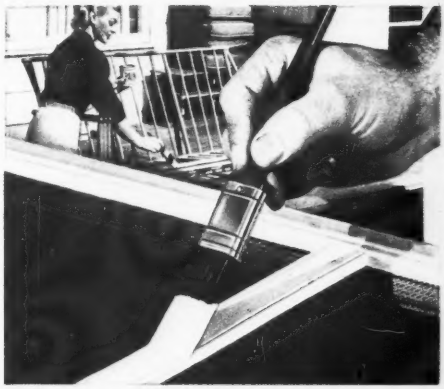
Animate Your Photos

[*Continued from page* 147]

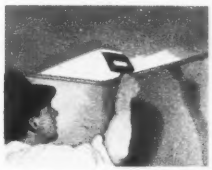
print you will want to use the limbs with some additional material left on the upper ends to allow for pivoting. Next cut out these areas with a coping saw. Drill holes into the tops of the arms and legs to accommodate loose fitting nails, insert small washers and attach screw eyes into the ends of the limbs (see photo). Now hammer the arms and legs into the body into their proper positions. The limbs must be free to pivot. Finally, tie the strings as shown in photo. A screw eye can be attached at the head to facilitate hanging. To operate merely pull down on the string. You'll have loads of fun. Don't overlook the possibilities of commercializing on this toy in your spare time. I've sold many to eager parents.—*Ro Capotosto* •

Read how you can win a Golden Hammer as a Workbench Award in next month's issue.

POINTERS FOR HOME PAINTERS

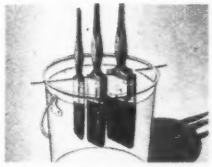


How to improve your paint jobs... make your brushes last longer

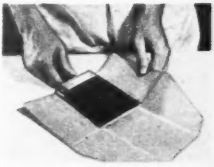


Start in corners of walls, ceilings and floors, and paint away from them. Use a strong stroke and work steadily so paint doesn't set before adjoining strip can be applied.

Don't let your brush "fish-tail" (see insert) by painting narrow or round surfaces with a large brush. Use small brush—one designed for the job—bristled with nylon.



Clean brushes with thinner after daily use. Suspend brush in thinner overnight. Bristle tips should not touch bottom of can. Work out thinner before painting again.



When you store brushes for longer periods, clean thoroughly and wrap securely in the manner shown here. Brushes stay in better condition when kept in shape.

For best results use NYLON PAINT BRUSHES

JOB AFTER JOB, you'll get best results with a well-tipped nylon paint brush. Durable Du Pont nylon bristles paint smoother . . . are clean and sanitary . . . never get brittle . . . don't break off even under the roughest treatment. And nylon bristles last from 3 to 5 times longer than ordinary bristles. Leading manufacturers make nylon paint brushes in all types and sizes. Look for the name NYLON on the handle. Be sure to pick the size brush designed for the job . . . and demand Du Pont nylon bristles.

DU PONT

REG. U. S. PAT. OFF.

Better Things for Better Living ... through Chemistry

The best brushes have DU PONT NYLON BRISTLES

Do it better with

STANLEY TOOLS

Add these top quality Stanley and "Yankee" Tools to your tool box or workshop and make the most of your time and talents. They're designed for professionals, yet priced for the occasional user. See them at your dealer's.

Stanley Smooth Plane No. 4 — A favorite everywhere. Alloy steel cutter, fully adjustable for fine or coarse work. Rosewood handle and knob.

Stanley Bit Brace No. 923 — Built for the hardest work. All-steel box ratchet, ball bearing head, self-centering jaws.

No. 100 Russell Jennings Auger Bit. For fast accurate boring, more holes between sharpenings. Hand-filed extension lip and spur. Sizes 3/16" to 32/16".

Stanley Aluminum Level No. 233 — Designed for accuracy, made to last. Adjustable Vial Holders. Strong rigid truss construction — 24" and 28".

STANLEY TOOLS 1853 • 1953 100th ANNIVERSARY

"YANKEE" TOOLS

"Yankee" Push Drill No. 45 Ideal for mechanics, hobbyists and handymen . . . makes quick work of boring small holes. Complete with 8 drill points.

"Yankee" Spiral Ratchet Screw Driver No. 130A. For driving or drawing screws — saves time and muscle. Quick-return spring repositions handle automatically.

STANLEY TOOLS
New Britain, Connecticut
THE TOOL BOX OF THE WORLD

Send for handy Stanley Tool Guide. Over 40 pages, 38 charts and 200 illustrations on the care and use of all hand tools. Only 25c postpaid.

STANLEY

STANLEY TOOLS
543 Elm St., New Britain, Conn.
(In Canada: Send to Stanley Tool Co. of Canada, Ltd., 543 Stanley St., Roxton Pond, Quebec)

Please send me:
☐ Stanley Tool Guide I enclose 25c ☐ FREE Stanley Bit Brace Folder ☐ FREE "Yankee" Tool Book

Name.....
Street.....
City..... State.....

HARDWARE • TOOLS • ELECTRIC TOOLS • STEEL STRAPPING • STEEL

FACTORY TO YOU $79.95

SUPERSHOP offers you a precision-built complete power tool workshop. 100% ball bearing. RUGGED. Accurate. Big capacity. 15 day FREE trial. Money back guarantee. Mail postcard for FREE catalog. Buy on easy pay plan.

POWER TOOLS, INC. 646 Yates Avenue Beloit, Wisconsin

BENJAMIN SUPER CO_2 GAS PISTOL

MORE MODELS Lower Prices

SAFE—NON-TOXIC—HI-POWER ACCURATE—ECONOMICAL CONVENIENT—PRACTICAL

Easy to operate—Uses low cost Soda Cartridges. Cal. .22 or Cal. .177 Benjamin H-C Pellets & Darts or BB.

Write Today for Illustrated Folder of All Models Benjamin Air Rifles and Benjamin Air Pistols.

$13.50 UP

BENJAMIN AIR RIFLE CO., 881 Marion St., St. Louis 4, Mo., U.S.A.

CASH IN YOUR SPARE TIME

UP TO $40 A DAY IN YOUR OWN BUSINESS. Easy to start repeat cash business at home with the New BELSAW...sharpening and setting circular saws, grinding planer and jointer knives. Low Cost, only $15 down ...Start to work the day your BELSAW arrives. No experience needed. Hundreds of jobs in your neighborhood. Send Today for Free Book, "Lifetime Security".

BELSAW MACHINERY CO.
3608 Field Bldg., Kansas City 11, Mo.

FREE BOOK TELLS HOW

CARS Magazine

Second issue on newsstands. First a sellout so get your May copy NOW!

WELD-BRAZE CUT-SOLDER

4 Ways to Handle 1001 Repairs Around Home-Garage-Garden

Complete welder with Twin Carbon Arc Torch and all operating accessories to do all types of metalcraft work. Easy instructions for work on iron, steel, bronze, brass and aluminum. Plugs into any properly wired AC or DC line. Low cost pays for itself in money saved and earned. A wonderful practical Gift of a lifetime. Order now!

only $14.75
f.o.b. factory
Larger Models Available on request.

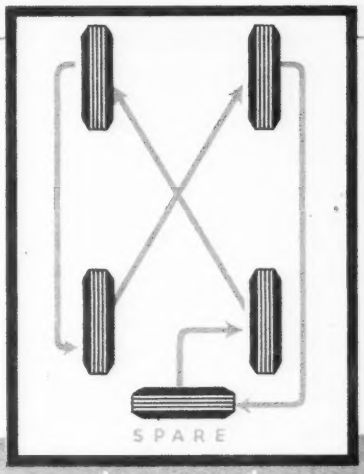
FOUR WAY WELDER CO.
2326 S. Michigan Ave.
Chicago 16, Ill. Dept. F4-DD

4 way welder
Yours on a money back 10 DAY TRIAL

Texaco Tips on car care

How to get longer tire life

When your tires wear unevenly, they don't give you full service. To get maximum mileage from your tires, they should be inspected often and rotated. See your Texaco Dealer for a thorough tire check. He will inspect the treads for irregular wear. He will check for trouble-making cuts and breaks . . . and fill your tires to the proper pressure. He will rotate them for a nominal fee. This helps you enjoy *more* miles of carefree motoring.



How to get that "cushiony" ride

Blast *Marfak* with a stream of water — and *it stays put*, won't wash away or drip off. That's why *Marfak* protects your car's chassis better — *longer*. It's scientifically made to resist the wash-away action of wet roads. And *Marfak* clings far longer to points of wear . . . fights squeeze-out and jar-out. This means *you get a cushiony* ride that lasts for 1,000 miles or more. Get longer lasting *Marfak* lubrication today. See your Texaco Dealer, *the best friend your car ever had.*

THAT "CUSHIONY" FEELING LASTS LONGER WITH

THE TEXAS COMPANY

TEXACO DEALERS IN ALL 48 STATES

Texaco Products are also distributed in Canada and in Latin America

TUNE IN: Tuesday nights on television — the TEXACO STAR THEATER starring MILTON BERLE.

See newspaper for time and station.

NOW YOU GET

MARLIN

RIFLE CLEANING KIT

RETAIL VALUE $2.75

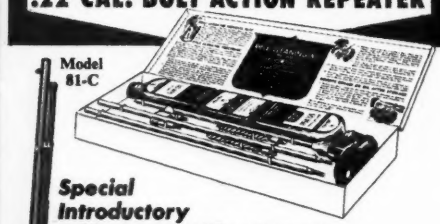
FREE

OF EXTRA COST

WHEN YOU BUY A FAMOUS

MARLIN

.22 CAL. BOLT ACTION REPEATER



Model 81-C

Special Introductory Offer! Look What You Get:

1. **Complete .22 Rifle Cleaning Kit.** Includes Duraluminum cleaning rod, slotted and jagged cleaning tips; 2 Phosphor Bronze brushes; Nitro Powder solvent; Gun Oil; Cleaning Patches; instructions included. Retail Value $2.75—but yours *FREE* of extra cost.

2. **A Marlin Model .22 Bolt Action Repeater.** Choice of *Model 81-DL*—de luxe 25-shot tubular magazine model, $30.95*; *Model 81-C*, standard version Model 81-DL, $28.95*; *Model 80-DL*, de luxe, 8-shot clip-magazine type, $26.95*; *Model 80-C*, standard version Model 80-DL, $24.95*.

**Prices slightly higher west of the Rockies.*

See your local dealer. If none available, write us for name and address of nearest one.

THE NAME FOR GAME *Marlin* FINE GUNS SINCE 1870

VALUABLE COUPON—MAIL TODAY!

The Marlin Firearms Co., Dept. M-4, New Haven, Conn.

Send me catalogue with information and photo-illustrations of Marlin Guns. I understand you will also send me a pack of (check) . . . single or . . . double-edge Marlin Razor Blades. I enclose 10¢ for handling.

*Name*_____

*Street*_____

*City*_____ *Zone*_____

*County*_____ *State*_____

1903—GOLDEN ANNIVERSARY—1953

Low-Cost DEPENDABLE **SHAW** 'DU-ALL'

Walking and Riding Tractors

Standard of quality for many years. Rugged 1½, 2½, 3 and 5 H.P. Walking Models. Powerful 5, 8, 12 H.P. Riding Tractors. A machine for every need from small garden to substantial farm. All wanted tools for complete ground preparation and cultivation. Power take-off attachments for many other jobs. See the *Shaw* dealer. Write for *FREE CATALOGS*, low prices on complete Shaw line.

SHAW MANUFACTURING CO.
2904 Front St., Galesburg, Kansas
668-ME N. 4th St., Columbus, Ohio

MAKE MONEY SELLING ESHELMAN Power Mowers Riding Tractors & Rotary Tillers

RAKES PLOWS CULTIVATES HARROWS HAULS SPRAYS SAWS DOZER MOWS CUTS ROLLS TILLS SNOW PLOW

Also WALKING TRACTORS LOW AS $95

ESHELMAN FOR Better LAWNS And GARDENS

Women Can Operate It. Free Catalog. Write nearest branch:

ESHELMAN CO.,
Dept. T-64, 119 Light St. Baltimore 2, Md.
333 N. Michigan Ave., Chicago 1, Ill.
405 Lake St., Reno, Nev.

$750 BUILDS 4 ROOMS & BATH!

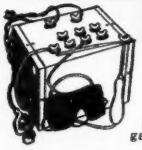
WHY PAY RENT? For Seven Hundred Fifty Dollars and 30 days of your spare time, you can build yourself this Beautiful Home. Living room 11x15. Front bedroom 9x11. Back bedroom 10x12. Kitchen 9x11. Bath 3x8. Hall 3x4. Wind out steel casement windows. Concrete block, stuccoed. Illustrated pictures, step by step instructions, blueprints and material list, $1.00. Money back guarantee.

L. N. FARROW, Dept. B, Box 645 Columbus 16, Ohio

Extra big disc sander

COMPARE size, quality, features! 5-in-1 SHOPSMITH has 12" disc, large tilting table, miter gauge, rip fence. Converts to saw, lathe, vertical and horizontal drill. Write for FREE catalog.

SHOPSMITH, Dept. 238-N
12819 Colt Rd., Cleveland 8, O.



TRANSFORMER WELDER $18.95 FOR QUINCY

Complete with everything. Ready to plug in. 110 volts A.C., 15-30 amps. 3 heats. Welds metal from 1/16" to 1/4" using 1/16" to 3/32" standard rods. Guaranteed unconditionally. 10-day trial. No C.O.D. We also make welder for 16-22 gauge metal, $3.95; 1/8" metal $6.45.

ESSAY MFG. CO., INC., Dept. 101, Quincy 69, Mass.

OZARKA BOAT KITS

Exclusive oak laminated construction . . . gives strongest boat hull afloat . . makes boat easier to build.

22 MODELS • A BOAT FOR EVERY NEED 39.50 and up

NEW 40-PAGE CATALOG.

Full line of Ozarka Boat Kits and accessories. Page after page of wonderful kits. Send 25c for catalog.

OZARKA, INC. 443 Borden, Woodstock, Illinois

TAKE A SEA-HORSE .. TAKE A "10"

The Finest Fishin' Motor a Man Can Carry!

Johnson Sea-Horse 10

$275.00 F.O.B. FACTORY

Here's power to breathe new life into your boat—and performance features to make it sing! 10 horses. Light weight. Perfect trolling. Gear Shift. Mile-Master Fuel Supply System. Synchro Twist-Grip Speed Control. *Everything*—and all yours at a price that is making outboard news! See your Johnson Dealer. Look for his name under "Outboard Motors" in your classified phone book.

Free Catalog! Write for the big new Sea-Horse Catalog that describes the 4 great Johnsons for '53. SENT FREE!

JOHNSON MOTORS, 200 Pershing Rd., Waukegan, Ill.
In Canada: Mfd. by Johnson Motors, Peterborough

FOR 1953 — FOUR GREAT ALTERNATE FIRING TWINS

SEA-HORSE 3 — 3 hp. 32-lb. *twin!* . . **$145.00***

SEA-HORSE 5 — 5 hp. Neutral Clutch. No shear pin! **$187.50***

SEA-HORSE 10 — 10 hp. King-Size Value! Dazzling performance! Only **$275.00***

SEA-HORSE 25 — 25 hp. Only 98 lbs.! Gear Shift. Mile-Master Fuel Supply System. Synchro Twist-Grip Speed Control . . . **$390.00***

SHIP-MASTER REMOTE CONTROL — New. Hooks up *in seconds* to special fittings on "10" and "25" **$29.50***

OBC **Prices f.o.b. factory, subject to change. OBC Certified brake hp at 4000 rpm. Weights are approximate.*

Johnson SEA-HORSES FOR DEPENDABILITY

THE ONLY MANUFACTURER WHO HAS BUILT A MILLION OUTBOARD MOTORS

Every Mechanic's Best "Helper"

INDESTRO "TOOL-MATES"

ALL INDESTRO TOOLS are "mated" to each other, and to the highest standards of quality — that's why they work together as perfectly as the fingers of your hand, and why they help you do any job much easier, faster, better . . . whether it's on cars or refrigerators, radios or the home work-bench. After you buy an Indestro Tool, you can add to it with the assurance that all your tools will really be "mates" to each other — and "mates" on your "team". That's the reason "top-money" mechanics prefer them. *See Chain, Variety or Auto Supply Stores* for Indestro "Tool-Mates."

COMPLETE TOOL LINE IN NEW CATALOG

Get the new Indestro Tool Catalog; colorfully illustrates and describes all the latest "mated" tools from a single screwdriver to a 112-pc tool tender cabinet on casters. Get your personal copy today. Don't bother to write a letter. Just tear out this page, write your name and address in the margin, enclose 10 cents to partially defray postage and handling. Mail to us today.

INDESTRO MFG. CORP.
N. Kildare at Schubert
Chicago 39, Illinois

172

Send for this BIG NEW Hunt's WOODWORKERS CATALOG NO. 19

ONLY 15¢

NEW LOW PRICES

Offers greatest selection of fine domestic and imported woods--and hundreds of woodworkers items at bargain prices!

You'll save time and money with this big, new catalog. Contains everything wood craftsman needs. Shows 32 rare and fancy woods in color...43 veneer designs...275 scroll patterns...multicolor inlays, overlays, bandings...all kinds of tools, machinery, cabinet hardware, ornaments, mouldings...and pages of valuable tips, ideas, information, instruction. Send for your copy NOW. Only 15c--refundable on your first order.

144 PAGES QUICK DELIVERY on maple, poplar, oak, mahogany, red cedar, cherry, walnut, and many others—all properly seasoned and kiln dried.

MAIL THIS COUPON--TODAY!

CRAFTSMAN WOOD SERVICE CO.
2729 S. Mary St., Dept. G4
Chicago 8, Illinois

Send me the big, new, money-saving Catalog No. 19. Enclosed is 15c--refundable on my first order.

Name_____
Address_____
City_____ Zone____ State_____

best white tape made

ONLY 98¢*

The new "Evans White-Tape" has everything you'll find in tapes costing over $1.50—plus.

- snow-white blade with bold, legible, jet-black numerals and graduations. Graduated in 32nds for first 6 inches.
- sturdy die-cast case heavily chrome-plated, calibrated for quick reading inside and outside measurements.
- blade ½" wide made of finest high carbon steel—tempered—Bonderized—enamelled—baked.
- blade replaceable in seconds—without tools—without even opening case. And Evans replacement blades cost far less.
- every "Evans White-Tape" is unconditionally guaranteed.
- exclusive Evans automatic brake gives smoother push-pull action with absolutely no "creeping" of tape into case.
- underside is white, too. Mark with ordinary pencil, remove mark with flick of thumb.
- unheard-of low price*: 10-ft. $1.49; 8-ft. $1.19; 6-ft. 98¢. Prices higher in far west and Canada.

Sold only through retailers.

Evans & CO. Elizabeth, N. J. • Montreal, Quebec

Portable Bench Saw

[*Continued from page* 139]

case, *remove the plug when making or installing the saw or making adjustments for depth or tilt.*

The handy drawer at the bottom will give you room for storing an electric drill and other tools which you will need for those countless chores around the house. Extra tool room is provided by a rack which fits under one side of the bench saw. Small parts such as nails, nuts and screws are kept in jars. These jars are clamped and held in place by large size tool holders. The jars rest on the bottom of the upper shelf, immediately below the saw. Access to them is gained by raising the hinged saw table.

One important feature of this saw is that it can be rolled to work. Two semi-pneumatic wheels plus a pair of extendable arms (made of ½ in. steel pipe) allow you to wheel it with very little effort. Wheels of larger diameter can be used if you are planning any cross-country trekking. Note how the arms pass through two rounded blocks on each side. The ends of the pipe are capped while the handle ends are fitted with rubber bicycle grips. Arms are moved out for lugging and table has about the same "feel" as trundling a wheelbarrow.

The saw table was built by Larry Nettie and Paul Brown of New York City from plans supplied to them by the editors of MECHANIX ILLUSTRATED.—*R. B.* •

Build Your Own Garage

[*Continued from page* 103]

shingles with 2-in. annularly grooved nails applied 1½ in. above the butt lines and ¾ in. from the edges. Use two nails per 6-in. or narrower shingle; for shingles 6 to 10 in. wide, use three nails; and for shingles over 10 in., use four nails. (Complete application details will be found in each bundle of Shingle-Backer.)

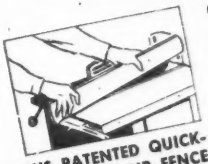
Installing the overhead door is a matter of following the manufacturer's application instructions.

On the roof, a layer of 15-lb. felt is put down first. Follow this with a double thickness of shingles as the lowest course. Overhang the shingles ½ in. at the eaves and ¼ in. at the gables to form drip edges. Drive 1-in. galvanized roofing nails ½ in. above slots in shingles and 1 in. each side of each shingle's center line. The bottom edge of each course should just cover the ends of the slots in the previous course. A metal strip covers the ridge. •

TODAY'S GREATEST SAW VALUE FOR YOU!

8" TILT/ARBOR SAW

BUILT HEAVIER! With More "Extras" Furnished!



PLUS PATENTED QUICK-POSITIONING RIP FENCE!

AND POPULAR PRECISION-GROUND GREY IRON TABLE!

See for yourself! Whether finishing your home, remodeling, or refurnishing—you can't find an 8" saw with the dollar for dollar value of the Atlas.

It's solidly built — weighs 130 lbs. Table is 22" x 18" — *precision-ground.* Saw cuts 2⅜" deep—table always flat. Sealed-for-life ball bearings.

Blade controls are Acme-threaded. Patented Atlas *double-locking* rip fence *lifts* off and on. Standard equipment includes: mitre gauge, stop rods, blade guard, splitter, motor mounting base, 8" rip-crosscut blade, V-belt, motor pulley. Be sure to see the Atlas before you buy any saw.

NEW 20-PLAN BOOK ONLY 50¢

Contains 20 original furniture and furnishings designs with step-by-step construction details. $.50 postpaid, $.65 outside U.S.A.

ATLAS PRESS COMPANY
422 N. PITCHER ST., KALAMAZOO, MICH.

SEND THIS COUPON FOR CATALOG

☐ Please send woodworking tool catalog.
☐ Inclosed is _____ for _____ 20 Plan Books.

Name _____

Address _____

City, State _____

UNCLE WALTER

IT SMELLS GRAND

AROMA PROMISING SWEET RELEASE

IT PACKS RIGHT

CUT TO PACK
SO JOYS INCREASE

IT SMOKES SWEET

MAKES EVERY PIPE
A PIPE OF PEACE!

IT CAN'T BITE!

SIR WALTER RALEIGH'S BLEND OF CHOICE KENTUCKY BURLEYS IS EXTRA-AGED TO GUARD AGAINST TONGUE BITE. STAYS LIT TO THE LAST PUFF. AND NEVER LEAVES A SOGGY HEEL IN YOUR PIPE.

It costs no more to get the Best!

Swedish Steel *Chisels*

SHARK BRAND

ESKILSTUNA, SWEDEN

Genuine Swedish Charcoal Steel hardened and tempered for two-thirds of the length of the blade — that's the *big* difference between SHARK BRAND Paring Chisels and the ordinary kind. You'll do *better, faster, more accurate work easier with these finest of all chisels.* They really stay sharp and are honed with an extra wide bevel for the professional carpenter or home workshop enthusiast.

Try one next time you're in a hardware store. Make sure it's SHARK BRAND. Sold singly or in sets with tough Curly Birch or unbreakable plastic handles.

Write for SANDVIK Folder
Dept. I

Sandvik Saw & Tool
Division of Sandvik Steel, Inc.
47 WARREN ST., NEW YORK 7, N. Y.

STEP UP GAS MILEAGE, CUT COSTLY REPAIRS

De luxe custom model

NEW!

STEWART-WARNER
MOTOR MINDER®

The new Stewart-Warner Motor Minder lets you see as you drive how to get more miles per gallon. Gives early warning of engine trouble, of faulty valves, rings, spark plugs, carburetor or timing.

The simple illuminated dial can be read at a glance. New Motor Minder is installed easily, quickly. Operates accurately on even latest high compression cars. Swivel mounting gives all-angle vision. Complete instructions are included.

Get it at your dealer's. If he cannot supply you, send his name and address, and your check or money order for $10.95 to Stewart-Warner. Your Motor Minder will be sent direct to you prepaid!

STEWART-WARNER
Instrument Division, Department V-43
1840 Diversey Parkway, Chicago 14, Illinois

Impartial Road Tests *Prove* MIRACLE POWER—

★ Increases Compression 13% ★ Adds 56% to Spark Plug Life ★ Reduces Cylinder Bore Wear 49% and Ring Wear 15%
★ Cuts Oil Use 33% ★ Doubles Fuel Pump Life

You've heard many wild claims for lubrication aids. Now, get *facts—proof* about Miracle Power established by an independent laboratory of unimpeachable reputation, Wetmore Hodges & Associates.

They ran two new truck engines under identical conditions using Miracle Power in only one. When the other engine broke down, records scientifically compiled proved the Miracle Power engine which was still running had 13% more power, 56% longer spark plug life, 49% less cylinder bore and 15% less ring wear, used 33% less oil, and doubled fuel pump life!

Why this amazing performance? Because Miracle Power, a secret blend of super lubricating agents including colloidal synthetic graphite in suspension, protects engines.

Insist on Miracle Power in gas and oil—remember its *proven* results.

Stops DRY STARTING Damage . . . Treats the Engine, Not the Oil!

During stops, oil drains off vital engine parts and it takes up to five minutes to pump it back after starting. Meantime, dry metal grinds against dry metal. Result: wear . . . lost power . . . repairs.

Use Miracle Power to protect engines with a breathlike lubricating film. It is not a purge—not a detergent—not a "soup-up" chemical—it treats the engine, not the oil.

THE AP PARTS CORPORATION *Miracle Power Division*
512 AP Building • Toledo 1, Ohio
Manufacturers of:
MUFFLERS • PIPES • MIRACLE POWER • dgf 123

Lubricates *Right* . . . from the Start

Get Miracle Power (money back guarantee) at gas stations, garages and Ford, Kaiser-Frazer, Willys and other car dealers — 75c ($1.00 in Canada)

© The AP Parts Corp., 1953

"Henry, hadn't you better shift your Scott-Atwater Gold Pennant* to reverse now?"

WRITE FOR FREE FOLDER!

Read all about the sensationally new Gold Pennant outboards. New in styling! New in features! New in performance! Write to: Dept. M-43, Scott-Atwater Mfg. Co., Inc., Minneapolis 13, Minn.

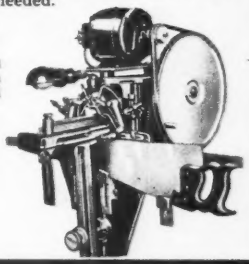
*7½ and 10 HP with Shift, "Stowaway" Tank, Twist Grip Speed Control

Made $900 IN SPARE TIME

"I did very well last year with my Foley equipment, filing 950 saws in my spare time. About $900 for me." Leo H. Mix, New York.

Make up to $3 or $4 an hour in Spare Time. With a Foley Automatic Saw Filer you can file hand, band and circular saws better than the most expert hand filer. Cash business—no canvassing. No eyestrain, no experience needed.

FREE BOOK—"MONEY MAKING FACTS" shows just how you can start at home in spare time, with small investment, no overhead—and develop into a full-time repair shop. Send coupon today for this practical plan. No salesman will call.



Send Coupon for FREE BOOK

Foley Mfg. Co., 415-3 Foley Bldg., Minneapolis 18, Minn.
Send Free Book—"MONEY MAKING FACTS"

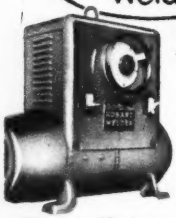
Name .....

Address .....

It's Easier...

to get in the BIG MONEY arc welding

- if you own a HOBART welder



200 amp. "Bantam Champ" Elec. Drive

EVERYONE NEEDS ARC WELDING

Farmers, contractors, factories, builders, homeowners, etc.—all need dependable welding work. That's why welding is today's fastest growing, biggest paying trade—a trade that offers unlimited opportunities to men of vision.

CASH IN NOW!

Set up your own welding shop now and start earning the big money. All you need is one Hobart Welder. It goes anywhere—handles any job—makes learning easy. Standard models offer 1,000 combinations of heat—and remote control—and are truly "simplified." Complete line of gas and electric drive models to choose from. Check coupon for details.

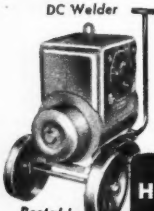
Portable Gas Drive DC Welder

Welding Books it will pay you to own.

TEXT AND LESSONS BOOK. Covers every phase of welding. 544 pages, over 600 illustrations....**$3.00**

LESSONS BOOK. Complete operator's training course. 200 pages, fully illustrated **$1.00**

PRACTICAL DESIGN. 100's of weld ideas in design form. 3 vols., 100 designs each. 1 vol. **$3.50**; set of 3 vols., **$10.00.**



Portable Elec. Drive DC Welder

Let HOBART train you!

HOBART TRADE SCHOOL

Learn welding in modern, non-profit school. Complete or partial courses. Best equipment, thorough training, experienced instructors. Check coupon.

Check Coupon for FREE Welding Booklet!

Hobart Brothers Co., Box SM-43, Troy, Ohio

"one of the world's largest builders of arc welders"

HOBART BROTHERS CO., BOX SM-43, TROY, OHIO

Send complete details on items checked.
☐ Electric Drive Welders ☐ Gas Drive Welders ☐ Hobart Trade School. Send books checked: ☐ Text and Lessons ☐ Lessons. Practical Designs: ☐ Vol. 1 ☐ Vol. 2 ☐ Vol. 3 ☐ Set of 3 vols. ☐ Welder's Vest Pocket Guide ☐ Cash enclosed. ☐ C.O.D.

free

Name_____

Address_____

City_____ State_____

MOST POWERFUL JIG SAW OF ITS KIND!

GUARANTEED ALL DURING YOUR OWNERSHIP

CUTS 1 INCH SOFT WOOD THIN METAL PLASTIC

SAFE! THOUSANDS USED IN SCHOOLS, SHOPS!

Portable. Any length cuts. Stroke adjustable. QUIET for apartments. SAFE for kids. Ideal for Dad's shop. UL-APPROVED. Dealers, or postpaid, $24.95.

Only $24.95

SYNCRO ELECTRIC TOOLS

Write for FREE Circular

SYNCRO CORPORATION, DEPT. W-43, OXFORD, MICH.

Comes with BUILT-IN MOTOR

WAR SURPLUS

FREE CATALOG

Bargains Galore. Welders, Generators, Motors, Hydraulics, Wire, Instruments, Meters, Gauges, Pumps, Drills, Winches, Books, Assembly Kits. Many other NEW and SURPLUS items. All merchandise guaranteed. Send for FREE LeJay Bargain Catalog today.

LEJAY CO., 214 LeJay Bldg., Minneapolis 8, Minnesota, or,
LEJAY CO., 928-1st Ave., So., B14 Seattle 4, Washington

Freeland METAL BOATS

NEW LUMA TOP for '53 Aluminum—12 ft.; 48" beam. Carry atop car. $179.

GALVANNEALED 12'-14'; $78-$130 Rugged, all-welded construction. Fast, safe. Take motors to 10 H.P. Write Dept. 74, for folder.

FLA. BRANCH

FREELAND SONS CO., STURGIS, MICH. 302 S. WATER ST., TAMPA

CARS Magazine

Second issue on newsstands. First a sellout so get your May copy NOW!

MARVEL *Mystery Oil*

- Frees Sticky Valves
- Stops Hydraulic Valve Clatter

Buy it at your favorite gas station

KING MIDGET

WORLD'S LOWEST PRICED 2 PASSENGER AUTO

JUST OUT-NEW CONVERTIBLE!

Operate it for 75c per week. Amazing performance. Surprising comfort. All steel construction. Ready to run or assemble it yourself with our bolt together parts. Rider Agents wanted, earn your car Free. Send 25c for detailed literature or $1 (refunded first order) for actual assembly book and service manual filled with photos, drawings, specifications, etc.

MIDGET MOTORS MFG. CO., ATHENS, OHIO

The '53 Volkswagen

[*Continued from page* 87]

found we were breaking fresh tracks in inches of snow for over a mile of hard climbing. On my test curve I almost lost the car for the first time. I hit the corner too fast on purpose and the tail of this little rear-engine job started heading for the woods. Rear engine cars act almost the opposite of front-engine cars under these circumstances and barreling for control is not the best way out of a rear slide. I took my foot off the gas instantly, the slide stopped and the car was on course again. John Fitch told me that he had a few close squeaks last summer at the Nurburg Ring when he raced a rear-engine Porsche. He said that on one or two occasions during the race he took a curve a little too fast and the rear started to slide off course. To get it back at once (unlike conventional driving, which requires throttle) he took his foot off the gas and the Porsche got back in line in an eye blink.

After our drive home from New York, the snow in the mountains continued and the roads were all but impassable. Just after midnight (sober) I made my first 1953 test, before the year was an hour old. Jim and I warmed up the little German splutter-box and headed for the hills. If Max Hoffman, who loaned me the car for the test, could have seen us I'm sure he'd have called for a couple of good head doctors.

After a few miles of ordinary snow-ploughing on the deserted main highway, we headed for some real tough stuff where the roads are hazardous even in July. Frankly, we both expected to get stuck. But the fantastic way this little pumpkin seed plowed through spots where angels were taking snow checks made us try and find the Volkswagen's point of no return. I started up a two-mile mountain trail, where the snow was unbroken even by a rabbit, and while the bright Bosch headlights bored a hole through the swirling snow and darkness the Volkswagen dug in and went up like a puff of smoke. This left only one challenge locally, an impossible one—my regular half-mile hill climb with its maximum 28 per cent grade. For laughs, over we went and found the road covered with a good seven inches of snow, with ice underneath.

Wondering how I was going to back down, we hit the climb, throwing snow off on either side like a speed boat. So help me, if there were just ten more horsepower of guts in the little four-cylinder pancake engine we would have made it in second gear without stopping. As it was just 30 feet from the top—

[*Continued on page* 183]

THE SARGENT

***Grip-Snip*...you need it**

for 5 KINDS of JOBS

1. Grips like a vise...a wrench-like grip that doesn't slip. Compound leverage multiplies power along entire length of jaws.

2. Cuts wire easily...outside cutters cut wire even when it tightly hugs a flat surface.

3. Holds nuts like a wrench...powerful parallel jaws and extra leverage prevent rounding corners.

4. Gets into tight spots...small nose of jaws permits working in close quarters.

5. Unkinks wire...run wire between jaws, from either end, to straighten or pull it.

• Get hold of a Sargent "Grip-Snip"* at your hardware dealer and see for yourself why mechanics, hobbyists, sportsmen, farmers—even women—call it their favorite. Comes in 4½, 5½, 6½ and 8-inch lengths. For further details, write Dept. 32D.

* Trade Mark

SARGENT

SARGENT and COMPANY

New York • NEW HAVEN, CONN. • Chicago

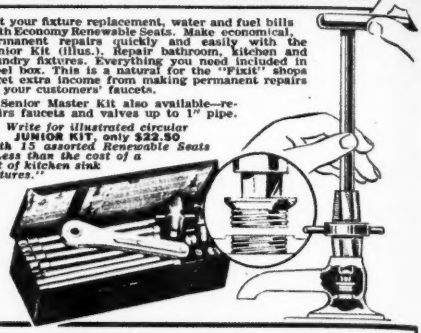
Builders Hardware and Fine Tools since 1864

STOPS LEAKS *PERMANENTLY*

Cut your fixture replacement, water and fuel bills with Economy Renewable Seats. Make economical, permanent repairs quickly and easily with the Junior Kit (illus.). Repair bathroom, kitchen and laundry fixtures. Everything you need included in steel box. This is a natural for the "Fixit" shops—get extra income from making permanent repairs on your customers' faucets.

Senior Master Kit also available—repairs faucets and valves up to 1" pipe.

Write for illustrated circular
JUNIOR KIT, only $22.50
with 15 assorted Renewable Seats
"Less than the cost of a set of kitchen sink fixtures."



ECONOMY VALVE SEAT CO.
1434 N. Keating Ave. Chicago, Ill.

STEP UP PERFORMANCE OF YOUR OUTBOARD

WRITE FOR OUTBOARDER'S BIBLE—our 1953 catalog. It's FREE! Contains much valuable information on how to get MORE SPEED, for racing or pleasure, from motors of 7½ to 50 HP; better performance and load carrying capacity from any motor old or new. Easily understood recommendations enable you to choose a propeller virtually custom-built for your motor and boat combination—much more rugged and damage resistant than the original. Write NOW. Michigan Wheel Co., Dept. M-64, Grand Rapids 3, Mich.

ONE-MAN SAWMILL LOW AS $50.00 DOWN

FREE BOOK

Take BELSAW Portable Sawmill right to the trees—turn out valuable lumber for home and farm — sell to local yards — make up to $50 a day custom sawing for neighbors. BELSAW lasts a lifetime. No crew needed. Power with tractor or auto engine. Beginners get excellent results. Send today for FREE BOOK, "HOW TO MAKE LUMBER"

BELSAW MACHINERY CO.
Dept. 8348 Field Bldg. Kansas City 11, Missouri

Build your own *JET ENGINE!*

Order these plans today

1. JET PROPELLED BICYCLE. Assemble your own. Photo and instructions $1.00.
2. HOW TO MAKE EXPERIMENTAL JET ENGINES. Seven sheets drawings with information and instructions $2.95.
3. BOTH OF ABOVE in one order $3.75.

SEND NO MONEY. Order both at once $3.75 C.O.D. in USA plus c.o.d. postage. Send check or Money Order and we pay postage. Get other information too. Rush Order.

J. HOUSTON MAUPIN, Dept. 88, Tipp City, Ohio

OIL FILTER REFILLS...10c

Here's News! Ordinary toilet paper makes an ideal oil filter. Laboratory tests prove it cleans oil faster and better than popular makes of filter elements. All you need is a simple set of **RETLIF ADAPTER PLATES**...and you can start using ordinary toilet paper rolls in your present oil filter. For proof and descriptive literature, send name and address to:

RETLIF CORPORATION, Dept. 116
1239 No. Highland Ave., Los Angeles 38, Calif.

The '53 Volkswagen

[*Continued from page* 181]

and well past the steepest grade—the engine died and I dropped down into first. Leaving it in first gear, I let it just grind away at partial throttle. Inch by inch, gradually wearing away the snow and ice under the rear wheels, the little Kraut clamshell worked ahead. We did some side-sliding in this last 30 feet but a little steering wheel correction now and then kept it on course. It took close to five minutes to make those last 30 feet—but make them we did.

I realize that many of you will think this part of the article as queer as a fur six-dollar bill, never having driven a rear-engine job in snow. Though unbelievably slow, our progress up the hill was steady and uninterrupted. There were no signs of tire burn or overheating. The car just went up inch by inch in first gear until we were on more level ground, then picked up in normal fashion.

About a week later, the East got whacked with an ice storm that did millions of dollars' worth of damage. Trees and branches were all over the road and all my mountain utilities, including light and telephone, went out. My wife and I had a dinner date some miles distant that we couldn't break as we had no way of phoning, so off we went in the Volkswagen, picking our way through a mass of hot power lines. On our return, very late that night, things had got much worse. The windshield was icing up (due to the poor location of the car defrosters, off to the side instead of being in the middle) and we found all our regular routes home blocked by fallen trees. This meant playing blind man's bluff, in total darkness on sheet ice and in deep snow, trying to find an open lane or path to get us back home. I was glad I was in the Volkswagen instead of the MG.

The VW's visibility is so much better than the MG's when the roadster's side curtains are up (a must in such weather) and the headlights are so far superior to the MG's United States-legal sealed beams that comparison is ridiculous. These Volkswagen lights (you must change them in many states and you can guess why) picked out fallen wires in their beam long before I got dangerously close. After riding nearly 50 miles to cover a normal 15-mile distance, we finally got home safe and sound and warm just as dawn was breaking. We had gone over roads and hillsides that no American car I know of could have travelled that night. And the experience had given us a real affection for this unlovely little beetle.

I first tested the Volkswagen several years

[*Continued on page* 185]

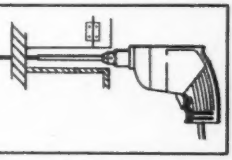
CHANGE DRILLS IN A JIFFY

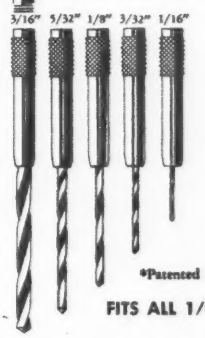
NOW! ELIMINATE SPECIAL LENGTH DRILLS

Widely used in the aircraft industry, this handy 9/32" diameter LITTLE BEAVER DRILL EXTENSION* and 8-1/2" x 1/4" extension rod makes small diameter, recessed drilling easy in hard-to-get-at-areas. Used on metal and wood with regular drills.

The LITTLE BEAVER DRILL EXTENSION is used in power and hand drills, lathes, drill presses, turret lathes for home workshops, production, cabinet making and boatbuilding.

Close drilling with extension rod and drill chuck on power drill.





*Patented

All for the one low price of

5.95 PER SET POSTPAID

SET CONSISTS OF
5 EXTENSION CHUCKS
8½" x ¼" EXTENSION ROD
5 HIGH SPEED DRILLS,
Sizes 1/16"—3/32"—1/8"—5/32"—3/16"

FITS ALL 1/4" CHUCKS

No C. O. D.'s. Send check or M. O. to

LITTLE Beaver DRILL EXTENSION · CHUCKS

BEAVER TOOL CO.
183M New York Ave., Box 298, Huntington, N. Y.

Please send me sets of the Beaver Extension Chuck and Rod at $5.95 per set.

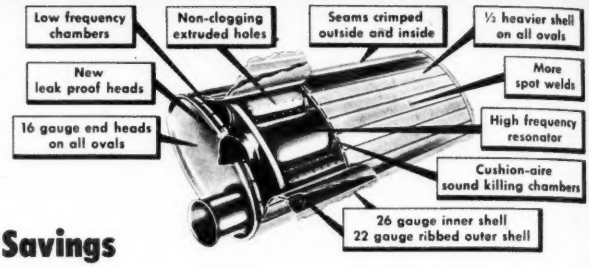
Name .....

Address .....

All Mufflers are NOT Alike

SILENTONE gives you

- ★ Safety
- ★ Power
- ★ Long Life
- ★ Up to $8.00 Savings



These features show why Silentones are the highest quality mufflers. They're made to car factory specifications or better • scientifically designed to lower back pressure which robs your engine of power • made of heavy steel inside and out. Because Silentone Mufflers are sold only through leading automotive chain stores, you save as much as $5.00—up to $8.00 if you install it yourself.

DYNATONE The Deep, Mellow Tone Muffler That's Engineered—Not Packed

Tuned for each make of car . . . costs less than "Hollywoods" • lower back pressure • more gas mileage • longer life. Ask about Dynatone duals for greater power and gas savings.

Write Dept. 512-S for name of your nearest Silentone dealer

SILENTONE • SOLD ONLY BY AMERICA'S LEADING AUTOMOTIVE CHAIN STORES • TOLEDO 1, OHIO

---

send for FREE CATALOG

America's Foremost *money-making* **MECHANICS' TOOLS**

It's easy to own the same "pay-off" tools used and endorsed by America's top-earning mechanics throughout the automotive, aviation and industrial fields! Snap-on tools help you handle every repair job faster, easier, better. And they LAST . . . pay for themselves over and over again! Start building your own tool set now with basic Snap-on units—add others any time. Genuine Snap-on tools are never sold in stores—direct to users only. Mail coupon for free catalog.

Snap-on Tools — THE CHOICE OF BETTER MECHANICS

SNAP-ON TOOLS CORPORATION
8078-D 28th Ave., Kenosha, Wisconsin
Send me free catalog of Snap-on tools.

Name _____
Address _____
City _____ Zone _____ State _____

---

the ORIGINAL!

WHIZ SAW

The All Purpose Cutting Tool

Precision Made for Precision Work

Home craftsmen will find Whiz Saw useful for rough cutting jobs as well as precision work. ACCEPT NO SUBSTITUTE . . . the original WHIZ SAW is one of the most versatile cutting tools ever invented. It cuts with amazing speed wood, bone, plastic fibre, pressed wood, hard rubber, etc. up to 1" thicknesses . . . it's scientifically designed for cutting inside shapes without first boring a starting hole. Ideal for jig or band saw use when inserted in handy WHIZ SAW table.

Whiz Saw #2 has greater capacity, cuts up to 2" thickness, $130.00. Whirl Saw, a 4½" circular blade, cuts up to 1¾" thickness, $49.00.

If not available at your dealers, write to: The Forsberg Mfg. Co., Bridgeport, 5, Conn. U.S.A.

WHIZ-SAW $5.00 Table $18.95

7 saws in 1 RIP, CROSSCUT, KEYHOLE, COPING, SCROLL, BAND OR JIG

the ideal cutting tool for: HOBBYISTS, ELECTRICIANS, CARPENTERS, PLUMBERS, SIGN-MAKERS, MAINTENANCE MEN

All-metal Whiz-Saw table may be secured with screws to wood bench or held in vise.

ANOTHER Forsberg PRODUCT
Makers of the Famous Whiz & Vibro Tools

The '53 Volkswagen

[*Continued from page* 183]

ago and was only mildly interested. It was fair weather and under these circumstances the car struck me as just a nice, homely little turtle that ran well, steered easily and cornered like a pool table on casters, just as a lot of other imports did. It took a real snow-and-ice storm for me to fully appreciate just how good the Volkswagen is. The new 1953 car has a swell four-speed synchromesh transmission you can play as easily as a garden hose. The ride over rough roads is phenomenal. So help me, I'd swear under oath that this German oil can sops up tough bumps and chuck holes as well as, if not better than a Fleetwood Cadillac, even though its four-wheel suspension makes it surprisingly bow-legged when the car is jacked up.

Outside of a few minor faults, such as the bad location of the defrosters, I have only one or two more complaints. The front seats are poorly anchored and they are so placed that if you have any more shoulders than a piece of spaghetti you will find them pushing uncomfortably against the window. The ignition lock and key is a ring-tailed dilly. Unless you happen to be Jimmy Valentine's father, you will find it almost impossible to get the key in the slot at night without a light, due to some weird serations on the lock. The choke on the car I tested was about as useful in cold weather as a raincoat on a duck. When the temperature falls to around zero and you need a choke the most, the wire freezes so hard that Hercules Zilch the Bayonne Strong Boy couldn't yank it out. When you finally do get the car going by hand-choking at the carburetor, it thaws out quickly and works fine.

Okay, you ask, how is its Fourth of July performance? It's okay, period. Top speed is 66. Zero to 30 takes 7.9 seconds, zero to 40 goes 15.3. Zero to 60 takes a long 42.1. The car averages close to 50 miles on a gallon of regular gas and there is enough storage room to carry a winter's supply of clothes for two people, using the back seat and a sort of storage bin behind that. Under the front hood next to the fuel tank there is enough room to store a weekend supply of shirts and cigarettes.

The Volkswagen is rated a four-passenger job and I drove it with four in the car, including Joe (in the back bin). But Uncle Herman, my honest relation, would spin in his grave like a pea in a whistle if I said my long-legged wife, sitting behind me, was comfortable. Four Singer Midgets, yes. Four jockeys, maybe. Four average-size guys, im-

[*Continued on page* 187]

YOUR HARDWARE STORE HAS
FRANKLIN
Liquid Hide
GLUE
FOR YOU

15c
LARGE TUBE

Genuine
HIDE GLUE
*** STRONGEST — most permanent results.**

Franklin Glue holds more than two tons per square inch—stronger than the wood itself—insures lasting joints that really hold.

use right out of the can
no waste — every drop works

Franklin Glue is genuine hide glue, favorite of the old-time craftsmen, but easy and ready to use. No heating, mixing, or odor. The choice of fine craftsmen everywhere.

Get it in tube, 2 oz., ¼ pt., ½ pt., pints, quarts or gallon sizes.

A trial tube will convince you. If your dealer does not have this size, write direct. Send 20c — 15c for glue plus 5c for packing and postage.

The Franklin Glue Co.
117 W. Chestnut St. Columbus 15, Ohio

LATEST NEWS ABOUT **SAVAGE** POWER MOWERS

★ **Companion products of world-famous Savage firearms** ★

COMPLETELY NEW ROTARY MOWER ANNOUNCED

"Gunmaker" Precision; Rugged Construction Features of Savage ROTOR CHIEF

The beautiful new Savage 20" ROTOR CHIEF knifes through practically anything—high weeds, matted grass, even underbrush! Its high-speed, propeller-pitched blade sucks grass upward, clips it off neatly—then spreads it in an even mulch that is good for your lawn. Clippings and debris are deflected to the side. Cuts close to walls, fences, walks. Does away with tiresome hand trimming.

100 YEARS

Nearly 100 years of engineering accomplishments and *gunsmith* craftsmanship are back of the Savage ROTOR CHIEF. Savage has used this experience to build a mower with the extra rugged construction and precision quality necessary to give outstanding, trouble-free service. You will recognize Savage gunsmith craftsmanship instantly. See a *Savage* at your dealer's this week!

Tips on how to have a perfect lawn plus details on Savage mowers are yours in an interesting, illustrated, free booklet. Write to Savage Arms Corp., Lawn Mower Division, 78 Broadway, Chicopee Falls, Mass.

SAFETY-SLIP clutch and belt drive protect blade and engine from shock.

CUTS WIDER than its own tread! Large rear wheels for easy maneuvering.

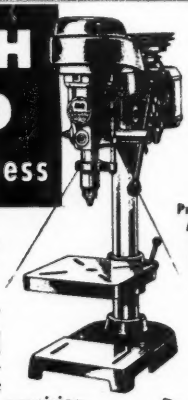
RUGGED STEEL frame, reinforced for rigidity. Briggs & Stratton 4-cycle engine.

"STA-TEMP" blade stays sharp; propeller-pitched whirls at 280 r.p.m.

"We're sold on our Savage!"

The 20" Savage ROTOR CHIEF* rotary mower, Model 81. The Savage line includes Savage YARD CHIEF*, Model 90, 21" reel-type; Savage POWER CHIEF*, Model 75, 18" reel-type; Savage DYNA CHIEF, Model 70, 18" reel-type electric mower; and four modern hand mowers. *Reg. U. S. Pat. Off.

SOUTH BEND 14" Drill Press



14" Precision Model Drill Press

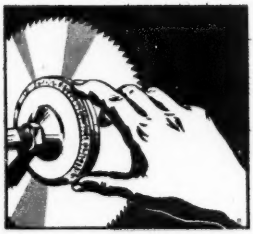
Precision Accuracy High Versatility

Ruggedly built—unsurpassed for accuracy, ease of operation, and dependable performance. Features include free-floating spindle, precision ball bearings, quick-action belt tension release and built-in shielded work light. Attachments available for tapping, mortising, etc. Standard spindle speeds 720 to 4325 r.p.m. Drills to ½" in steel. Also floor models, streamlined economy models, and multiple spindle models. Write for catalog.

"How To Run A Drill Press"—32 pages—over 75 illustrations—25c.

SOUTH BEND LATHE
SOUTH BEND 22, INDIANA
Building Better Tools Since 1906

NOW—40 different cuts with AMAZING, NEW Warren DADO SAWING WASHERS



ON YOUR SAW BLADE!
NO Warp . . .
NO Wobble . . .
NO Burning!
ONLY **$4.95** PER SET

4 Washers Mean Perfect Balance

Make clean, smooth parallel grooves at any angle—no chewing, no sanding. Just dial your cut—no trick screws, no vibration, strengthens blade for straight cuts. Warren Washers greatest improvement in 30 years—and most copied—look for the name on the box and washers. It costs no more to get the best—WARREN, IT'S GUARANTEED! At your dealer or order direct. Give arbor size—½", ¾", ⅝", 1"—sent postpaid.

Send For Free Booklet

WARREN DADO SAWING WASHERS CO.
Dept. 224, Box 98 North End Station
Detroit, Michigan

The '53 Volkswagen

[*Continued from page* 185]

possible. This is a good two-passenger job with two emergency seats for people with flat legs.

In summing up, the Volkswagen has an air-cooled pancake engine that is proving itself as reliable as the sun. The car makes no effort at all to be stylish. It has absolutely functional looks that were not designed to be chic but to appeal to people more interested in transportation at low cost. The paint job and general trim are excellent. A close examination of even the smallest details, such as the wiring and heating system, will prove at a glance that regardless of price this is a quality automobile from one end to the other. I strongly recommend the Volkswagen to anyone interested in this type of car, for at the price (approximately $1,400) there is nothing better built in the world and few that are half as good.—*Tom McCahill.* •

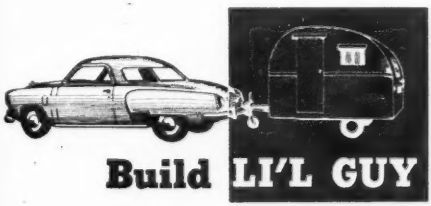
SPECIFICATIONS

MODEL TESTED:
1953 Volkswagen two-door sedan

ENGINE:
4 cylinder, rear-mounted, air-cooled, OHV; bore 2.953 inches, stroke 2.520 inches; cylinders horizontally opposed; piston displacement 69.014 cubic inches; brake horsepower 24 @ 3000 rpm; compression ratio 5.8 to 1

DIMENSIONS:
Wheelbase 94.5 inches; overall length 160 inches; tread 51 inches front, 49.2 rear; width 60.5 inches; height 61 inches; weight 1,600 pounds; standard tire size 5.60x15; gas tank 10.5 gals

PERFORMANCE:
0 to 30 mph, 7.9 seconds
0 to 40 mph, 15.3 seconds
0 to 60 mph, 42.1 seconds
Top speed, 66 mph



Build LI'L GUY

Hit the road with Li'l Guy, an 8-ft. all-plywood house trailer that has everything—including a kitchen sink! Weighing a mere 780 lbs., Li'l Guy's Fiberglas-covered body will stand plenty of rough treatment. Large-scale plans include many photos and a full bill of materials. For your copy send $1.00 to MECHANIX ILLUSTRATED Plans Service, Fawcett Bldg., Greenwich, Conn. Please specify Plan HJ-17.

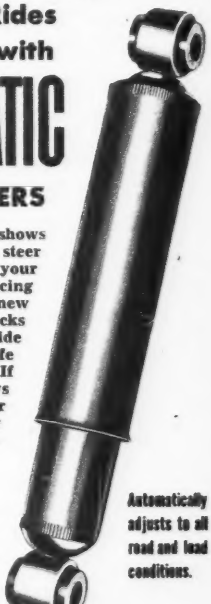
Take The Monroe

30-DAY FREE RIDE!

Prove Your Car Rides Better Than New with

MONRO-MATIC SHOCK ABSORBERS

If your car rides rough, shows uneven tire wear, is hard to steer on curves, chances are your shock absorbers need replacing . . . 2 out of 5 cars need new shocks. Monro-Matic shocks give you a smoother, safer ride on any road — longer car life — increased tire mileage. If not convinced in 30 days Monro-Matics make your car ride *better than new*, your money refunded. See your Monroe dealer today!



Automatically adjusts to all road and load conditions.

Send 10c FOR NEW SHOCK ABSORBER MANUAL

Informative, instructive, tells the right shock for your car. Detailed instructions for removing old worn shocks, installing new. Send only a dime to cover handling cost.

MONROE AUTO EQUIPMENT CO.
Monroe, Michigan • Dept. D
World's Largest Maker of Ride Control Products

Modernize the QUICK, EASY WAY with Sanitas® the fabric wall covering!

here's
ONE DAY DECORATION
that gives years of crack-free beauty and protection to walls and ceilings

Sanitas is the wonderful *fabric* wall covering that washes like a charm, hides unsightly plaster cracks and withstands abuse that ruins ordinary wall decoration. Sanitas is ideal for plaster board, plywood and other "dry wall" materials, too. You can transform the average room in one day, without fuss, muss or paint odor . . . and enjoy beautifully perfect walls and ceilings for years to come. Insist on genuine Sanitas, at your favorite paint, wallpaper or department store. Beautiful patterns and solid colors for every room!

hanging Sanitas is so simple it's fun!

Sanitas rolls are 24" wide, already trimmed on the edges. Simply cut to length and apply ordinary wallpaper paste to the back.

Just hang it up and brush it out smooth! Because Sanitas is strong *fabric*, you can pull it off and start over in case of error.

Push the seams together with your hands, wash down with a damp cloth, and you're done. Sanitas is the easiest of all wall coverings to hang!

Send for actual Sanitas Samples!

Interchemical Corporation, Coated Products Division
67 West 44th St., New York 36, N. Y.

Please send me samples of Sanitas and your easy-to-follow hanging instructions.

NAME.....
ADDRESS.....
CITY.....ZONE.....STATE.....

BE A HIGH-PAID MAN IN YOUR COMMUNITY with this LONG NEEDED INVENTION

Earn up to $10,000 or more per year! Nothing to invest! Be your own boss! U.S. Pat. D 153853 D 153854

A worldwide product needed by every home, business and farm . . . priced to sell quickly at long profit! Automatic Red Comet goes into action as soon as fire starts . . . smothers fire without human aid. It's a sales natural.

FREE SALES KIT

Demonstrator units, sales literature, etc., furnished you FREE. Handsome leather-type kit. Tried and proved, it will make you an independent businessman. ACT NOW! Someone in your community will be appointed soon. Write for details, today!

RED COMET, INC.
Dept. 36-F, R. C. Bldg., Littleton, Colo.

Print Your Own

Cards, Stationery, Advertising, labels, circulars, photo and movie titles, church work, tags, etc. Save money. Sold direct from factory only. Raised printing like engraving, too. **Print for Others. Good Profit. Have a home print shop.** Easy rules supplied. Pays for itself in a short time. Write for free catalog of outfits and all details.

KELSEY PRESSES, S-9, Meriden, Conn.

Catalog OF 3000 Novelties 10c

Send 10c for amazing catalog of novelties, live animals, scientific supplies, hobbies, funmakers, planes & boats, looms, magic tricks, joke articles, unusual seeds, gadget timesavers, cameras, optical goods, projectors, movies, lucky jewelry, religious novelties, disguises, musical instruments, stamps, coins, puzzles, fortune tellers, radios, auto & bike accessories, telescopes, magnifiers, compasses, banks, smokers' gadgets, artists' supplies, printing sets, engines, motors, shockers, knives, billfolds, fireworks, guns, rifles, sports, books, games, plants, etc. Send name, address & 10c to:

JOHNSON SMITH & CO., Dept. 663, Detroit 7, Michigan

SpeedWay Speed Sander

SANDS, SMOOTHS, CLEANS, BUFFS, POLISHES

This motor-driven, all-ball-bearing, orbital motion finishing sander works any wet or dry abrasive—3 covers from standard sandpaper sheet makes it easy to finish or refinish furniture, woodwork, walls. Ask your dealer to demonstrate.

Write for electric tool catalog.

SpeedWay Mfg. Co. 1866 SO. 52ND AVE. CICERO 50, ILLINOIS

JITTERBUG • CATCHES MORE FISH

Noisy surface bait. World's best hooker—day or night. Gurgling, paddling action of the double-lobed lip makes fish strike hard. 5/8 oz. or 3/8 oz. or 1/4 oz. spinning size $1.25. Musky size $2.00.

FRED ARBOGAST & Co., Inc., 1844 W. North St., Akron 3, Ohio

FREE WRITE TODAY FOR YOUR BIG FREE ARBOGAST COLOR CATALOG—FULL OF PICTURES OF CATCHES

more fishing fun!
LESS MAINTENANCE
STARCRAFT

ENJOY years of fishing in a safe, easy-to-handle *Starcraft Boat.* **Rugged, lightweight construction of *magnesium, aluminum, stainless or galvanized steel.* Low prices. Every desirable feature. Write for free catalog today. Dept. TD-4**

STAR METAL BOAT CO. • GOSHEN, IND.

MI Tests '53 Dodge V8

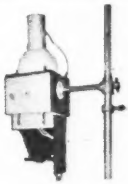
[*Continued from page* 85]

snow at the top even in July, I found a 1952 Dodge Coronet, with Swiss plates, on my tail. In close to 30 miles of climbing up to the hideout of the famed brandy-tossing St. Bernard monks and their dogs on the Italian-Swiss border, I tried every trick in the book to shake this Dodge. The Dodge had more power than my Citroen but what floored me was that through the hundreds of hairpin turns and switchbacks, the Dodge stayed in sight all the way.

I'd lose him in the turns but then I'd find him getting around in amazing fashion and with his extra power he'd soon be behind me again. Undoubtedly, this Swiss Dodge was equipped with export shocks and springs. But anyway, this Detroit potato, unlike Hannibal's elephants, showed me that all hope definitely isn't lost for American cars when one of them can keep pace with one of the best mountain cars in the world on one of the toughest roads in the world. Okay, I would have slaughtered him on the way down, when his power advantage would have done him little if any good. But I'll never know because he swung into the monastery—maybe one of the St. Bernard dogs was driving and was chasing Joe in my car.

In summing up, I rate the new V8 Dodge an excellent automobile that will satisfy a variety of owners. It will give the drag race and high performance boys a real lethal four-wheel bomb. And by the same token I can't think of a more satisfying, medium-priced piece of equipment for the businessman who needs reliable transportation that will whip him from town to town in the fastest legal time. As a family car the Dodge (all models) is loaded with room, easy to handle and with its top brakes and fast steering should prove safe. I rate the 1953 Dodge V8 an excellent medium-priced American car and a welcome addition to the field. •

the MI pipe fittings enlarger



Enlarge up to 4x5 in. negatives with this sturdily constructed piece of darkroom equipment that you can make from standard plumbing supplies and a camera. For complete plans and data, remit 50 cents to MECHANIX ILLUSTRATED Plans Service, Fawcett Building, Greenwich, Conn. Specify Plan No. P-8.

BE YOUR OWN BOSS! Men who are determined to get ahead in something for themselves will find this opportunity hard to beat! Where else can a man turn his own labor so quickly and easily into BIG MONEY! Earn as high as $50 and more a day sanding floors with an easy-to-run American Machine—and YOU ARE BOSS. Prospects everywhere—old and new homes and remodeling. Pleasant indoor work—steady the year round. No schooling — no experience needed. Age makes no difference—men 18 to 80 are active and successful. Send coupon for "money-making" booklet entitled "Opportunities in Floor Surfacing"—enclose 25c in coin or stamps to cover handling.

AMERICAN FLOOR MACHINES

SEND

The American Floor Surfacing Machine Co.
531 So. St. Clair St.
Toledo 3, Ohio

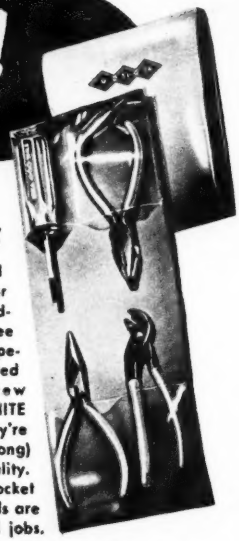
Enclosed find 25c in stamps or coin for booklet "Opportunities in Floor Surfacing", telling me how I can start my own floor sanding business.

Name_____

Street_____

City_____ State_____

NEW!



A UTICA®
TOOL KIT THAT
FITS YOUR POCKET

If you like tools you'll go for this one! Four midget tools in a folding plastic wallet. Three types of pliers with special red plastic covered handles and a screw driver with red TENITE handle. Though they're "midgets" (4" to 5" long) they're of finest quality. The wallet fits your pocket perfectly and the tools are exactly right for 1001 jobs.

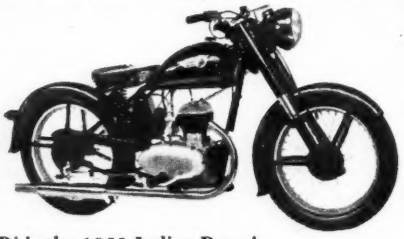
NATIONAL HARDWARE WEEK — April 17 to 25

During National Hardware Week your local dealer has some good news for you about a special price on this wonderful UTICA midget tool kit. Ask him about it — and other tools by UTICA

UTICA®
DROP FORGE AND TOOL
CORPORATION
UTICA, N. Y. NEW YORK

IT PAYS TO BUY QUALITY TOOLS
and the world's best tools are made in U.S.A.

THE 1953 Indian BRAVE
Low in Price — High in Performance



Ride the 1953 Indian Brave!
A Husky, Man-Sized Motorcycle in the Lightweight Field!
Big Rugged 4 cycle Power Plant!
Pep, Performance, -and- Low Cost!

SEE YOUR LOCAL INDIAN DEALER OR WRITE BOX BMI
THE INDIAN CO. — SPRINGFIELD, MASS.

Telescope Maker's Page

[*Continued from page* 151]

are not really seas at all but vast desert plains.

Parts of the moon have been better mapped than certain areas of the earth. This is because our huge telescopes bring the moon so near.

The moon has great practical value to us. Besides offering a well-worn theme to countless song writers it is responsible for the tides. This is due to the gravitational pull of the moon on the earth. The force of the moon's gravity pulls the water on the earth toward the moon. As the earth keeps turning, the bulge of water toward the moon keeps moving around the earth. That part of the earth which is directly opposite the moon at time of high tide, has low tide. Half a day after a place has had high tide, it has high tide again, with, of course, a low tide in between. The tides come about an hour later each day. This is so because the moon crosses a given point in the sky nearly an hour later each day. •

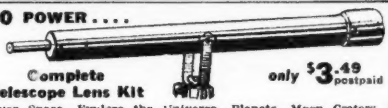
—*R. B.*

☆ GIANT ☆
ASTRONOMICAL TELESCOPE

Ready for use. 6 ft. tripod. 100 diameters magnification. (10,000 area magnification.) Extra eyepiece especially suited to observing Milky Way, Nebulae, Comets, Double Stars and Star Clusters. Sun projector lens for watching sun spots. Full power and clear vision guaranteed. $15.00. 25% deposit on C.O.D. orders.

Shipped via Express F.O.B. Riverhead.
SUFFOLK SCIENCE SERVICE
DEPT. AT RIVERHEAD, N. Y.

250 POWER....



Complete Telescope Lens Kit only $3.49 postpaid

Conquer Space, Explore the Universe, Planets, Moon Craters, New Stars, etc. Complete Lens Kit consists of 80 inch focal length ground and polished objective lens, eyepiece lenses for 50 POWER, 100 POWER, 150 POWER, 200 POWER, 250 POWER, and all necessary lens fittings. Easy to make from simple step by step instructions. (Tripod and mount not included.) Money back guarantee.
BUSSE SALES CO., Hartford, Conn., Dept. ML 3

EVERYTHING For The AMATEUR
TELESCOPE MAKER
Make your own telescope. Quality supplies guaranteed. Complete kit $4.50 up. Pyrex mirrors made to order. Aluminizing. Prisms—eyepieces—etc. Free catalog. Instructions—10c.
PRECISION OPTICAL SUPPLY CO.
1001 East 163rd St., New York 59, N. Y.

60 POWER TELESCOPE $3.95
VARIABLE EYEPIECE 20 x 40 x 60—BRASS BOUND

NEW! Three telescopes in one. 3 different magnifications. 20 power for ultra-bright images with 40 and 60 power for extra long range. Guaranteed to bring distant objects, people, sports events, ships, moon, stars, etc. Most powerful for anywhere near the money. 5 Sections. Closes to 1 ft. long. Contains 4 60 times as ground and polished lenses. Also used close. as a powerful compound microscope. Directions included. Mass production enables us to offer this instrument at amazing price of $3.95. Nothing Else to Buy. We pay postage. Get yours at once.
CRITERION CO. 331 CHURCH ST.
DEPT. BML 14 HARTFORD 3, CONN.

WAR SURPLUS AIRCOMB BARGAINS — SAVE UP TO 90%

D.C. GENERATORS

Finest aircraft quality . . . heavy duty . . . lifetime grease-sealed ball bearings. Terrific for truck and marine use, for welders, plating, D. C. Appliances, lights, etc. Type P-1. Mfd. by Ford, General Electric, Westinghouse & Delco-Remy. Rated 200 Amps., 28 Volts, 2500 RPM., can be "reved" up to 300 Amps. Shpg. Wt. 53 lbs. Approx. Govt. Cost $350 . . . New to you.....$21.50

MAKE YOUR OWN ARC WELDER Complete make-up package consisting of one New P1 Generator 200 Amps. one reverse current relay, one voltage regulator and a wiring diagram chart showing conversion of Aircraft Generator to Arc Welder. Nothing else to buy. Special—WHILE THEY LAST—$32.50

"HELIOS" ORIGINAL TOOLMAKERS VERNIER CALIPERS

ULTRA PRECISION—Imported for the really critical mechanic who must have the best. Recommended and used by experimental and research machinists at Lockheed, Douglas, Bendix, GM, RCA, GE. ALL NEW and at low, low prices . . . but quantity is limited! Model 51-Genuine Helios. Hardened lapped precision surfaces. 1/1000" and 1/10 mm graduations. Has handy slide roll and thumb lock. Quick, accurate depth. A $35 value. It's yours complete with leather carrying case for just $6.95.

RIVET SETS Universal type, case hardened tips. Set of dies will head up only brasier or round head rivet from 1-1/6" to ¼". With adapters for air gun or hand use. All new—cost Govt. approx. $27.00. Complete 15 piece set (wt. 2 lbs.).....$5.00.

RIGHT ANGLE ACTUATOR

Has worm gear drive in 6 to 1 ratio. Thrust shaft and 9/16" dia. and travels 12", forward or reverse on Acme Worm Thread. Drive shafts on either side of housing are ⅜" dia. with 16 splines. Overall length 23", width 4". Ideal for pushing, pulling or lifting. Sealed, self-lubricating chamber. Shpg. Wt. 5 lbs. Govt. Cost $150. NEW.....$4.95 ea.

MICROMETERS

Chrome plated, precision engineered, carefully tooled to give long life. All new 0-1" capacity—$2.25 ea., 1-2" capacity—$3.50.

SEND 25c for BIG · NEW · 1953 CATALOG

Bargains for everyone. Check, Money Order or Cash. 25% deposit on C.O.D. orders. Prices F.O.B. Culver City, Calif., unless otherwise stated.

AIRBORNE SALES CO., INC., Dept. M1453, 8501 Stellar Dr. Culver City, Calif.

Use RUST PROOF NEVER-STAIN

ALUMINUM NAILS

Yes, for less than $4.00*, you can avoid costly premature repainting. When you use "Never-Stain" ALUMINUM NAILS on the siding of your home, you are insured against unsightly rust spots and streaks. No countersinking and puttying necessary — a $60 to $75 additional saving.

When you build or remodel, insist on lifetime "Never-Stain" ALUMINUM NAILS.

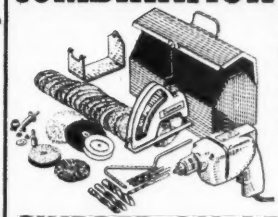
*For the wood siding on the average 5-room house.

Write Dept. MI for FREE SAMPLES and LITERATURE

NICHOLS WIRE & ALUMINUM CO.
DAVENPORT, IOWA

The New Improved Model 38-98

DYNAMIC POWER TOOL COMBINATION



INCLUDES: Cummins ¼" Pistol-Grip Electric Drill; Cummins Saw Attachment; Combination Saw Blade; Set of Drills; Lambs Wool Bonnet; 13 Sanding Discs; Steel Arbor and Attachments; Cloth Buffing Wheel; Grinding Wheel; Wire Wheel Brush; Steel Paint Mixer; Steel Bench Stand; Portable Steel Carrying Case.

Price of Dynamic Power Tool Combination complete is $29.95

SHIPPED ON APPROVAL

No Money With Order — No C.O.D.

Try it ten days before you buy. If completely satisfied then send $4.95 and pay balance at rate of $5.00 per month for 5 months — No Interest or Carrying Charges Added. If not completely satisfied, return to us, no explanation necessary.

KAPNER HARDWARE, INC.
Dept. A-69, 2248 Second Ave., New York 29, N. Y.

Please rush 1 Dynamic Power Tool Combination. I agree to pay $4.95 within 10 days after receipt and $5.00 per month thereafter.

Name.....

Address.....

City..... Zone..... State.....

JOIN THE FUN—SAVE 50%

PACKAGED BOAT KITS

EASY TO ASSEMBLE

OUTBOARD CRUISERS from $349.50

SEND 25c FOR BIG 1953 CATALOG

See our complete line before you Buy! World's most complete line of real Performance Boats: Dinghies, Skiffs, Pontoon Racers, Runabouts, Outboards, Cruisers. Exclusive features, mahogany parts plus brass screws. Also marine hardware, fittings, accessories and quality paints. Catalog plus booklet "Boat Selection, Operation & Maintenance" $1.00

BOAT PAINT, ACCESSORIES and FITTINGS

SEND 35c for World's most complete Catalog of Full Racing and Speedboat Accessories, general boat hardware, fittings, paints, conversions and conv. kits. Also new "ARMOR-GLASS" covering material for boats. Catalog plus booklet "How to Paint, Outfit and Care For your Boat" send $1.00

BOAT PLANS AND FULL-SIZE: PATTERNS

Over 100 Modern plans and full size patterns. Racing classes, cruisers, inboards, outboards, sail boats. By famous designers. 6' to 30'. DESIGN CATALOG only 35¢. For Design Catalog plus boat building handbook send $1.00.

CUSTOM-CRAFT (DEPT. C) BUFFALO 7, N. Y.

CAR OWNERS - SAVE UP TO $275.00 A YEAR!

get 37-49 miles PER GALLON FROM ANY CAR

WORLD FAMOUS SPEED CHAMPS & AUTO ENGINEERS TELL HOW:

- TO GO 15,000 MILES WITHOUT OIL CHANGE
- GET 30 M.P.H. MORE TOP CAR SPEED
- GET 10,000 MORE MILES FROM YOUR TIRES

ALL MAKES! ALL MODELS! ALL YEARS!

HERE IT IS! THE NEWHOUSE 1953 SPEED POWER AND ECONOMY MANUAL!
The most authentic, complete and fully illustrated book of its type ever published is now available to all motorists! See for yourself the quick, easy, step-by-step photo illustrations that reveal the most amazing speed, power and economy secrets of the Century. Learn how to: overhaul your engine in 1 hour . . . get as much as 3-5 more miles per gallon with the twist of a screwdriver . . . restyle your car to get an expensive "sports car" look. Cut engine friction and wear by more than 66% with Auto-Moly—new MOLYBDENUM additive to get high mileage . . . faster starts and increased speed and power! Save **hundreds of dollars** on gas, oil, auto repairs and economy products!

Photos and Diagrams Show Easy Step by Step Methods

This sensational new book with its FOOL-PROOF, easy-to-follow instructions is the same as having the nation's best qualified experts actually show you how! Detailed drawings and cutaway diagrams make every step along the way so simple that anyone can understand—even if you've never held a screwdriver! Learn how to resurface cylinder walls and seal in compression without removing one part from your engine. Get thousands of extra miles from your tires simply by using your nose . . . get special methods for obtaining "high test" performance from regular gas . . . How to start a dead battery car by using a bumper jack. This book contains hundreds of money saving hints and "how to do it" instructions such as how to convert a "jalopy" into a sleek "speedster" with push-button windows and doors, custom grillwork, plastic top at only a few dollars total cost . . . How to save $300 when selling your used car.

10 DAY FREE TRIAL AT OUR EXPENSE!

MAIL COUPON TODAY . . . Special Offer Gives You 4 Books For The Price Of One. Three valuable handbooks described below (Reg. $2.00 value) are yours to keep. If you don't agree that the SPEED & POWER MANUAL, the 3 gift handbooks and discount benefits are the best $1.98 value you've ever seen . . . return Speed & Power Book for full refund.

$1.98

SEND NO MONEY
Mail Free Gift Coupon Today!

The True Story on Where Your Gas Goes!

At last, the facts are revealed for all to see. Learn how, with the twist of your wrist and with the use of easy-to-get products, you can DOUBLE THE PRESENT MILEAGE AND POWER OF YOUR CAR. Learn why 80 cents of every gas dollar you spend doesn't move your car one inch. Learn how you can easily and quickly release the shackled horsepower in your engine and stop draining 20% of the power potential out your exhaust . . . dissipating 30% on operation of your ignition, oil and water systems. The Newhouse Book reveals for the first time the **tested proven** methods and techniques that answers the "gas poor" motorists' every problem.

ORDER TODAY ON SPECIAL NO-RISK GUARANTEE!

Mail coupon now for your Speed & Power book, get 3 extra books described below absolutely FREE. Read the Speed & Power book for 10 days. If you are not completely convinced that this book will help you save money every mile you drive and help you get better performance, send it back for full refund and keep the three extra books. No questions asked; no obligation. Remember:

PAY $1.98 ONLY IF YOU DECIDE TO KEEP BOOK!

Newhouse Automotive Industries,
Dept. MIB-4, San Gabriel, Calif.

FREE CLUB MEMBERSHIP

ECONOMY CLUB

ORDER BOOK TODAY AND RECEIVE FREE Life Membership in Gane Economy Club, national car owners' cooperative. Share these privileges with ½ million members: **FREE** gas coupons, **FREE** trial & premium offers, **FREE** magazine subscription, **FREE** catalogs of merchandise you can "buy without money." Members save hundreds of dollars.

LOOK!

220 PAGES
500 PHOTOS AND DRAWINGS (combined)

SEND NO MONEY! Mail Free Gift Coupon NOW

NEWHOUSE AUTOMOTIVE, Dept. MIB-4
San Gabriel, California

Rush me the Newhouse SPEED, POWER & ECONOMY HANDBOOK for NO RISK EXAMINATION. I agree to pay postman on arrival $1.98 plus postage. If not completely satisfied I will return it within 10 days for a full refund.

Also send me ABSOLUTELY FREE the 3 handbooks: "Economy in Driving," "High Performance Equipment" and the "Famous 'How' Booklet." These I will keep as a FREE GIFT even if I return the big Newhouse Handbook. Also, don't forget to include my Economy Club Membership and FREE gift certificates.

Name _____
(Please print in pencil)

Address _____

City _____ Zone ___ State _____

SAVE MORE! If you send $1.98 with coupon, we pay all postage charges. Same money-back guarantee.

3 BOOKS FREE!

These $2.00 value books are yours to keep even if you return the big Speed & Power Book.

1. ECONOMY DRIVING MANUAL . . . 48 pages of selected economy hints and info. on top auto economy products. (Reg. 75c value.)

2. HIGH PERFORMANCE EQUIPMENT MANUAL . . . pictures & lists 1,000 tested power, speed and economy parts and accessories. (Reg. 25c value.)

3. FAMOUS "How BOOK" . . . Reveals for the first time the secret of how some drivers can and do get up to 150 m.p.h. (Reg. $1 value.)

What Every Car Owner Should Know!

Complete Information on How to:

- Boost horsepower up to 30%.
- Cut gas and oil expense one-half.
- Make and install water-vapor injectors systems.
- Convert to automatic transmission.
- Make your own hill holder.
- Get six forward speeds.
- Zoom from 0 to 60 mph in 12 seconds!

Also Learn:

- 10 ways to save on oil.
- High-Speed Fuel Formulae.
- Use of Dual Ignition systems.
- Upholstering techniques.
- To build your own supercharger.
- Restore compression in 10 minutes.
- To convert your car to 150 mph hot rod or sports car.
- To get quick cold morning starts.
- How to double braking power.
- Customizing and restyling.
- To reduce motor friction 77%.
- To drive 50,000 miles without changing your **oil filter.**
- Use of jet and airflow needles.
- One-hour overhaul method.

PRINTED IN U.S.A.

the best motor means the most fun !

the right motor for every boat

Give yourself *all* the fun there is in fishing! There's a bass hole that's always been too many miles away? You can be there in *minutes* with an Evinrude! Like trolling? Horsepower for horsepower there isn't another motor made with the slow, steady trolling performance that's engineered into *every* Evinrude. At your Evinrude dealer's, you can see—and *try*—America's finest line of fishing motors. The smoothest. The starting-est. The most complete. With *practical* features, like Gearshift, Duo-Clutch, Roto-Matic Control, Cruis-a-Day Tank, Fisherman Drive, Auto-Lift Hood and the new Simplex Remote Controls that clip on, or off, in 30 seconds . . . important engineering developments that make your Evinrude a joy to handle and pack solid satisfaction into every fishing hour. Look for your dealer's name under "Outboard Motors" in the yellow pages of your phone book. *Catalog FREE!* Write today for full-color catalog of the complete Evinrude line for '53. EVINRUDE MOTORS, 4941 North 27th St., Milwaukee 16, Wis.

In Canada: Mfd. by Evinrude Motors, Peterborough, Ont.

LIGHTWIN . . . . . 3 H.P.*
Finest of light motors—smooth, quiet, powerful—only 32 lbs.! Famed Fisherman Drive. $145

FLEETWIN . . . . 7.5 H.P.*
Popular 47-lb. "all-arounder" for family and fishing boats. Duo-Clutch, Safti-Grip Drive. $210

Super FASTWIN . . 15 H.P.*
Brand,new this year! New Auto-Lift Hood. Gearshift, Roto-Matic Control and Cruis-a-Day Tank. Engineered for new Evinrude Simplex Remote Controls. $325

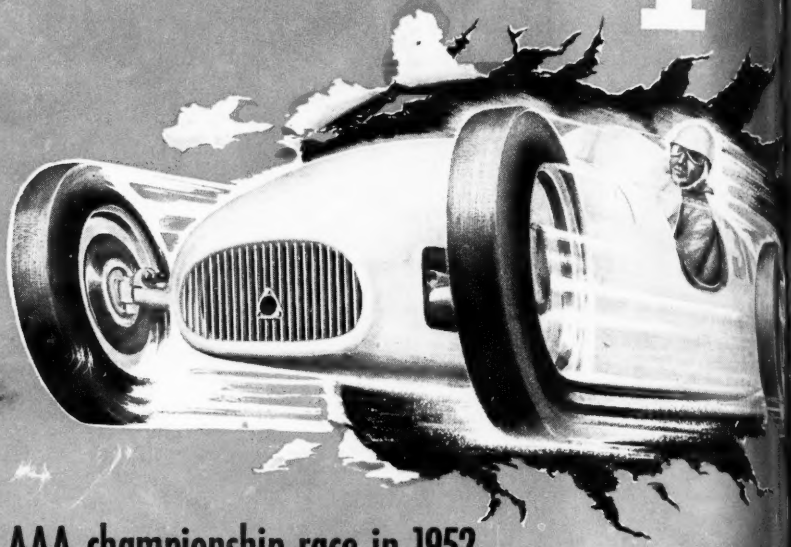
BIG TWIN . . . . 25 H.P.*
America's top outboard motor. Most power per pound and per dollar. Gearshift, Roto-Matic Control, Cruis-a-Day Tank. Engineered for remote controls. $390

*O.B.C. certified brake H.P. at 4,000 R.P.M. Prices F.O.B. Factory, subject to change.

EVINRUDE

First in Outboards...43rd year

clean sweep!



Every AAA championship race in 1952 was won by a car equipped with

These were the winning drivers ... the winning rings were Perfect Circles!

May 30	Indianapolis, Ind.	500 Miles	Troy Ruttman
June 8	Milwaukee, Wis.	100 Miles	Mike Nazaruk
July 4	Raleigh, N. C.	200 Miles	Troy Ruttman
Aug. 16	Springfield, Ill.	100 Miles	Bill Schindler
Aug. 24	Milwaukee, Wis.	200 Miles	Chuck Stevenson
Aug. 30	Detroit, Mich.	100 Miles	Bill Vukovich
Sept. 1	DuQuoin, Ill.	100 Miles	Chuck Stevenson
Sept. 1	Pikes Peak, Colo.		George Hammond
Sept. 6	Syracuse, N. Y.	100 Miles	Jack McGrath
Sept. 8	Denver, Colo.	100 Miles	Bill Vukovich
Nov. 2	San Jose, Calif.	100 Miles	Bobby Ball
Nov. 11	Phoenix, Ariz.	100 Miles	Johnny Parsons

Perfect Circle
PISTON RINGS

What does this mean to you? Just this—if your engine is tired, sluggish, oil thirsty, you'll get championship performance with Perfect Circle piston rings!

Perfect Circle's 2-in-1 Chrome Set seals compression, seals oil, for over twice as long as ordinary rings. And only 2-in-1 offers a choice of expander springs with each oil ring, to assure positive oil control.

For sustained power, longer life, real gas and oil economy, install 2-in-1 in your car. Perfect Circle Corporation, Hagerstown, Indiana; The Perfect Circle Co., Ltd., Toronto, Ontario.

!
le
GS
r engine
ampion-
n rings!
ression,
y rings.
springs
ntrol.